S. HRG. 103-121

"MONEY'S WORTH" OF SOCIAL SECURITY

Y 4. F 49: S. HRG. 103-121

"Money Worth" of Social Security, S...

HEARING

BEFORE THE

COMMITTEE ON FINANCE
UNITED STATES SENATE

ONE HUNDRED THIRD CONGRESS

FIRST SESSION

MARCH 11, 1993

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CONTENTS

OPENING STATEMENTS

	Page
Moynihan, Hon. Daniel Patrick, a U.S. Senator from New York, chairman, Committee on Finance	1
Packwood, Hon. Bob, a U.S. Senator from Oregon	2
Riegle, Hon. Donald W., Jr., a U.S. Senator from Michigan	4
Breaux, Hon. John, a U.S. Senator from Louisiana	13

COMMITTEE PRESS RELEASE

Finance Committee to Review "Money's Worth" of Social Security	1

ADMINISTRATION WITNESSES

Enoff, Louis D., Acting Commissioner of Social Security, accompanied by Harry C. Ballantyne, Chief Actuary, Social Security Administration, Baltimore, MD	6

PUBLIC WITNESSES

Myers, Robert J., Chief Actuary, Social Security Administration (1947–1970), Silver Spring, MD	18
Schobel, Bruce D., corporate vice president and actuary, New York Life Insurance Co., New York, NY	21
Aaron, Henry J., Ph.D., director, Economic Studies Program, Brookings Institution, Washington, DC	27
Ball, Robert M., Commissioner of Social Security (1962–1973), Washington, DC	31
Kotlikoff, Laurence J., professor of economics, Boston University, and research associate, National Bureau of Economic Research, Boston, MA	33
Shoven, John B., Charles R. Schwab, professor of economics, Stanford University, Stanford, CA	38

ALPHABETICAL LISTING AND APPENDIX MATERIAL SUBMITTED

Aaron, Henry J., Ph.D.:	
Testimony	27
Prepared statement	51
Statement before the Subcommittee on Deficits, Debt Management and International Debt of the Senate Finance Committee, April 12, 1991	54
Ball, Robert M.:	
Testimony	31
Prepared statement	58
Breaux, Hon. John:	
Opening statement	13
Chafee, Hon. John H.:	
Prepared statement	62
Enoff, Louis D.:	
Testimony	6
Prepared statement	63

Page

Kotlikoff, Laurence J.:
Testimony 33
Prepared statement 68
"Social Security: A Financial Appraisal Across and Within Generations," article by Michael J. Boskin, Laurence J. Kotlikoff, Douglas J. Puffert, and John B. Shoven, reprinted from the National Tax Journal, March 1987 71
Moynihan, Hon. Daniel Patrick:
Opening statement 1
Prepared statement 97
Myers, Robert J.:
Testimony 18
Prepared statement 98
Packwood, Hon. Bob:
Opening statement 2
Riegle, Hon. Donald W., Jr.:
Opening statement 4
Schobel, Bruce D.:
Testimony 21
Prepared statement 100
"An Updated Money's-Worth Analysis of Social Security Retirement Benefits," report by Robert Myers and Bruce Schobel 101
Shoven, John B.:
Testimony 38
Prepared statement 125
"Personal Security Accounts: A Proposal for Fundamental Social Security Reform," by Michael J. Boskin, Laurence J. Kotlikoff, and John B. Shoven 127

COMMUNICATIONS

American Association of Retired Persons 150

"MONEY'S WORTH" OF SOCIAL SECURITY

THURSDAY, MARCH 11, 1993

U.S. SENATE,
COMMITTEE ON FINANCE,
Washington, DC.

The hearing was convened, pursuant to notice, at 10:12 a.m., in room SD–215, Dirksen Senate Office Building, Hon. Daniel Patrick Moynihan (chairman of the committee) presiding.

Also present: Senators Riegle, Breaux, Packwood, and Chafee.

[The press release announcing the hearing follows:]

[Press Release No. H–5, March 9, 1993]

FINANCE COMMITTEE TO REVIEW "MONEY'S WORTH" OF SOCIAL SECURITY

Sen. Daniel Patrick Moynihan (D.–N.Y.), Chairman of the Senate Committee on Finance, announced today that the Committee will hold a hearing on the "money's worth" of Social Security.

The hearing will begin at *10:00 a.m. on Thursday, March 11* in room SD–215, Dirksen Senate Office Building.

The Committee will hear the views of the administration and Social Security experts on a recent analysis that compares the amounts that workers paid into Social Security to the amounts that they can expect to get back in retirement benefits.

The analysis suggests that, under the assumptions used by the authors, workers who retired in the past received or are receiving benefits of far greater value than the Social Security taxes they and their employers paid, but that some workers retiring in the future will not get their money back.

"Social Security is our most important domestic program," Senator Moynihan said. "It is a duty of this Committee to conduct regular oversight hearings on how the program is faring. We will solicit views on the usefulness of a money's worth analysis of Social Security, and on what, if any, the implications of such an analysis might be for Social Security policy."

OPENING STATEMENT OF HON. DANIEL PATRICK MOYNIHAN, A U.S. SENATOR FROM NEW YORK, CHAIRMAN, COMMITTEE ON FINANCE

The CHAIRMAN. A very good morning to our witnesses and guests.

This is part of the regular oversight hearings of the Committee on Finance in our most important field of professional responsibility, Social Security.

The subject we have before us today is a question that has been very much on people's minds, but not much in the way of inquiry has been forthcoming, much less has this committee ever held an oversight hearing on the subject which is, just what is the return on Social Security contributions to the recipients when they draw them?

We are speaking of old age and survivor's insurance. These benefits can come in the form of survivor's benefits, but normally, they

are retirement benefits. The question is, what is the payback for the contribution?

We have unquestioned evidence that it was the intent of the founders of the system that this be a contributory pension arrangement. For that reason, individuals were given named accounts, numbered accounts. The money is kept in exactly that mode.

Most recently, that most distinguished and venerable of Social Security experts, Robert J. Myers, who was a member of the group under Edwin Witte who drew up the Social Security proposal in 1934, and Bruce Schobel, who is a distinguished actuary in his own right, have published an article entitled, "An Updated Money's-Worth Analysis of Social Security Retirement Benefits," in which they make the point that the system has now matured rather precipitously. In my untutored view, it has matured from one in which there was a very large return on contributions, which is symbolized by that lady in Vermont who paid $25 into the system and drew about $22,000 in benefits from 1940 to 1975.

All early systems of that nature are more than generous, but the time comes when stability is necessary. And it appears to have come rather suddenly and is upon us.

In any event, we are going to hear from our very able witnesses. First of all, of course, we are going to hear from the administration itself in the form of Louis D. Enoff and Harry Ballantyne, the present Actuary.

Then, we will hear from Mr. Myers and Mr. Schobel, then, from further eminences still to come.

[The prepared statement of Senator Moynihan appears in the appendix.]

The CHAIRMAN. Senator Packwood.

OPENING STATEMENT OF HON. BOB PACKWOOD, A U.S. SENATOR FROM OREGON

Senator PACKWOOD. Mr. Chairman, thank you very much.

What was the name of the fellow who was 101 years old and lived in upstate New York?

The CHAIRMAN. Luther T. Gulick.

Senator PACKWOOD. Take a little of my time and tell them the story about his conversation with President Roosevelt and the numbered accounts.

The CHAIRMAN. He was a professor of public administration. I am sure Bob Ball and Bob Myers, you remember Luther Gulick.

He was a Columbia professor. And he was down here in 1940 on some business. And he called on President Roosevelt, as, indeed, in those more informal days you could do.

We were just beginning to collect a lot of Social Security accounts with pen and ink. They were being put on these little buff cards.

He said to the public administration VP and the President, "As a matter of economy, I think we should just probably collect the money and pay it out."

Roosevelt in the manner he would have, if you had seen him, he said, "Now, Luther, I'm sure you're right about the economy, but the economy never had anything to do with those accounts. We want each individual to have an account with his or her name on

it and his or her number so some damned politician could never take Social Security away from them."

And he wrote this down. And I have cited it a couple of times. I found myself asking 1 day, "What did Luther Gulick go on to do after the war and all?"

I couldn't find him in Who Was Who. He just was not there, and that did not seem likely that he never got into Who Was Who. I just looked him up in Who's Who.

Sure enough, there he was living in a little village called "Potsdam on the Saint Lawrence River." Rather tentatively, I called the village sheriff who said, "Oh, yes, Dr. Gulick. Sure, he's right down there on Spring Street."

So I picked up the phone and called the telephone number. Luther Gulick answered the phone, and I confirmed exactly this story.

He was 100 years old, born in Kyoto, Congregationalist, Republican, son of a missionary. I am sorry to say, I record with great respect that he passed away at the age of 100 just this January. That was reaching out and touching the event.

Senator PACKWOOD. I do not know what Dr. Gulick would think now, but now that the taxpayers all know that they have an account and an account number and know how much they have paid in, I am not sure what they are going to think when they begin to realize that what they have paid in, they are not going to get out.

And I understand the theory. We are in here today, social insurance versus individual numbers. And I have read the reports that Mr. Myers has done.

But it is going to be an interesting debate in terms of political support of this program if people begin to think that they've not going to get their money back.

And the thing I like about the chairman is he is willing to look at these on a long-term basis. I realize, this is not a problem in 5 years or 10 years.

And so we are inclined to put these things off until suddenly we are faced in a very short term with a cataclysmic problem 15 or 20 or 25 years from now when the baby-boomers start to retire in immense numbers.

And maybe we will face it. Maybe we won't, Mr. Chairman, but these hearings are the kind of hearings that we ought to be doing in the hope of alerting some people to a problem that is going to come whether we like it or not.

The CHAIRMAN. And certainly, for those who think of Social Security as some grand transfer program.

Senator PACKWOOD. Let me take a few other minutes because there is only the three of us here. One of the things that is so enjoyable about Pat or the things that he calls to your attention, I cannot resist telling him about Professor Putnam's book which I read over the weekend.

We were passing some time on the floor. And I had been in Pat's office the night before. And we were talking about health insurance. And all he said was, "Well, you want to be careful. Just because something works someplace else, that you transform it here doesn't necessarily mean it will work here."

And he called to my attention Professor Putnam's work on the provincial governments in Italy. And it turns out, in 1970, the Italian Government—and correct me if I am wrong on this because I sort of Evelyn Wooded the book. I did not read it all, but I read enough of it to get the gist.

In 1970, the central government in Italy, which had been a centralized government, gave all of the provinces identical, in essence, home-rule charters, identical language.

So Professor Putnam thought it was a wonderful opportunity to study what happens when governments get an identical article of government to work from.

And he studied it for almost 20 years. And it worked well in some areas. And it worked absolutely terribly in other areas, all in the country of Italy.

And he tried to separate out the variables and the constants and finally came to the conclusion that really, if these provinces had good government in the middle ages, they had good government now. And if they didn't, they didn't. And it did not really matter what the form or the articles of government were.

And I thought that was most interesting as we start to copy other government systems of one form or another that we might want to be careful that there may be variables we do not understand. And the form of health insurance or the form of whatever it is we do may not be as critical as the culture.

And I thank you for giving me that book.

The CHAIRMAN. Thank you. Cautionary tales.

Senator Riegle.

OPENING STATEMENT OF HON. DONALD W. RIEGLE, JR., A U.S. SENATOR FROM MICHIGAN

Senator RIEGLE. Thank you very much, Chairman Moynihan.

And let me say two things at the outset. First, I want to thank you for your leadership over so many years on Social Security and on all the issues related to it.

I do not know where we would be in this country without the leadership you have given. And then, you continue to give. As a citizen, I am deeply grateful. And I also am as a Senator. And I just want to acknowledge that.

I want to say as well that Bob Ball and Bob Myers who are here today, I think, also have been and continue to be the critical forces in our country in terms of the spectacular success of Social Security, its success as a social insurance program for our country.

It is striking that when you do public opinion polls and you ask people what the Federal Government does that we do right and that they support and feel good about and that they do not want damaged or in some way hampered, at the top of that list always comes Social Security.

It is the one thing that we have done that people see the value of. And they see it in their own lives.

They see it not just at retirement age or for younger families who have parents or grandparents in retirement, but this program is much broader than that.

The importance to me of this hearing today is to underscore the broad insurance concept that is here. In other words, to make an

insurance program work, you really need two things. You need a broad pool over which to spread your cost and the things that you are protecting against.

And you also want to have it done in a way that minimizes the administrative cost. In other words, you want to squeeze that down so that the revenues that come in can get recycled. It can be paid out in the form of the various benefits that are spelled out.

On both counts, Social Security is the most successful effort of its kind because we have a national pool, so that we are able to spread the risk across the entire society, so that we get the advantages of the insurance concept in its broadest.

And secondly, any measure of the administrative cost of Social Security as apart from other kinds of insurance schemes or other government activities will show that we have kept the administrative cost down to a very tiny fraction.

In fact, I think we may be spending too little on administrative cost. In other words, of not being able, for example, to answer the 800 number readily when people call in with inquiries about their account and so forth.

One other thing, and this is so important because I think in the shorthand of the way we get communication messages these days, there is a tendency to think of Social Security as solely a retirement program.

You work during your work life. You contribute. Your employer contributes. You retire. You draw the benefits. That is a key part of Social Security, but it is only a part. The rest of the protections in their own way are every bit as valuable and as necessary as retirement benefits.

For example, there is a disability benefit. If a young worker is on their way to work today and is disabled in an accident on a freeway and cannot work again, that worker under the social contract we have under Social Security has the ability not to become a pauper, not to have their family and children become paupers, but to be able to sustain themselves because they are part of this National, social contract in the insurance system where we have anticipated that that will happen to some number of people.

And we do not want those people's lives to be destroyed when a disabling accident happens, whether they are on their way to work, at work, or what have you.

In addition to that, we have, if we think of an even worse case, an instance where someone is—a younger worker loses their life. We have a survivor's benefit so that again, you have a situation where the family is able to derive some support and some financial strength, but it comes off this National insurance contract that we have one with the other.

We hope this will not happen to us, but if it does or to the person next door or across town, then, we are tied into this arrangement where we provide this kind of insurance one to the other.

And it is a very important benefit. It is being—in every single day, there are younger workers in our society, workers up and down the scale to which these events happen, and families.

And the Social Security system kicks in. It is there when they need it. And thank God for it.

Finally, there is also health care protection in the Medicare Part A portion of Medicare. And so it is not just a matter of a retirement benefit per se in the sense of an income that comes in at retirement age, but it also is the very important and very valuable, very financially important support that comes through Part A of Medicare.

So any serious discussion of Social Security cannot be squeezed down to an artificially small definition of what it is, as important as that may be, namely, retirement benefits, but we have to understand this broader scope of the protections because that is really what ties the generations together.

This is really a cross-generational program. This is not just a matter of the younger workers providing a flow of income into the fund for retired workers, whether in their family or outside.

It is actually a cross-generational set of insurance protections so that younger workers have available to them at exactly the time they need it the most of a form of social insurance that they would not have any other way.

And so having said that, this hearing, despite the absence of a lot of television cameras—they are probably upstairs in the Budget Committee where I must next go, as we are marking up the budget today.

This is an extraordinarily important subject that we are looking at today. This is one of the real values that the American people are able to achieve through our system.

And again, I want to thank you, Chairman Moynihan, for your leadership in this area because I shudder to think where we might be if we had not had that leadership.

The CHAIRMAN. Thank you, Senator Riegle.

And why don't we just begin with Lou Enoff who is the Acting Commissioner of Social Security and who is accompanied by Harry Ballantyne who is the Chief Actuary of the Social Security Administration.

STATEMENT OF LOUIS D. ENOFF, ACTING COMMISSIONER OF SOCIAL SECURITY, ACCOMPANIED BY HARRY C. BALLANTYNE, CHIEF ACTUARY, SOCIAL SECURITY ADMINISTRATION, BALTIMORE, MD

Mr. ENOFF. Thank you, Mr. Chairman.

The CHAIRMAN. All statements will be put in the record.

[The prepared statement of Mr. Enoff appears in the appendix.]

The CHAIRMAN. You may proceed exactly as you wish. I am looking forward to what you have to say.

Mr. ENOFF. Thank you.

And let me first apologize. I started my day in Baltimore this morning and left my jacket hanging there. I did not realize it.

The CHAIRMAN. It is the routine. Do I have a necktie on? Yes. I have a necktie on. [Laughter.]

Mr. ENOFF. I am not trying to make a statement along those lines. [Laughter.]

But I do appreciate being here because I think, when it comes to Social Security, there is probably no question asked more often than, "Will I get my money's worth out of this program?"

And so I, too, applaud you for convening this hearing to discuss that very important issue. And I will, as you have already indi-

cated, submit my full statement for the record and keep my comments brief this morning.

I would say that, in addition to discussing the issue of benefits to payroll contributions ratio in depth and analyzing the Myers and Schobel paper, the statement does include a table on its last page that I think provides some enlightening statistics.

That table gives you the present value of old-age, survivors', and disability benefits for single males, single females, and married couples born in selected years from 1920 through 2000. That value is expressed as a percentage of the present value of the employee contribution.

The CHAIRMAN. Can I just ask? Would you give us a definition of present value? It is an economic term and has, I think, an agreed upon content.

Mr. ENOFF. I think I would ask the Chief Actuary to define present value.

The CHAIRMAN. All right. Tell us about the present value.

Mr. BALLANTYNE. Yes, Chairman Moynihan.

By present value, we mean the value at a point in time of a series of payments of money made over a period of time. And it takes account of the time value of the money or the interest that the money can earn.

The CHAIRMAN. Would thereafter generate?

Mr. BALLANTYNE. Right.

The CHAIRMAN. So that in a time value, $100 would over——

Mr. BALLANTYNE. Right. If the interest rate, for example, is——

The CHAIRMAN. Ten percent?

Mr. BALLANTYNE. Ten percent. If you have $100 today, then, a year from now, the present value of it would be $110, because it would have earned $10 of interest. So the present value today of $110 a year from now would be $100.

The CHAIRMAN. Right. This is the base from which you generate revenue?

Mr. BALLANTYNE. Right.

The CHAIRMAN. All right.

Mr. ENOFF. As that table points out, for example, I will just make a couple of examples, male workers with average earnings who will reach age 65 this year can be expected to receive more than twice the value of their taxes paid.

Female workers age 65 this year with the same earnings can be expected to receive more than 2½ times the value of their tax contributions.

So looked at in these terms, working Americans are still getting their money's worth from Social Security. And I want to say right up front that if one considers both employer and employee taxes, then these ratios would be half.

The point I really want to make this morning, Mr. Chairman, is that we cannot look at the value of Social Security strictly from a benefits versus contributions perspective.

To do so is to risk losing sight of the broader purpose of this program that has provided millions of Americans with financial security and stability for over half a century.

Individual equity, that is, the amount a worker receives in benefits compared to the amount of contributions he or she paid, is only one aspect of Social Security's value.

Another aspect is how well Social Security is meeting the goal of social adequacy, that is, the need to provide some level of basic financial protection to workers and their families.

The value of Social Security should be determined by its effectiveness as a social insurance program, combining elements of both individual equity and social adequacy.

Because benefits are related to a worker's lifetime earnings, individual equity is an intrinsic part of the Social Security concept.

But to understand and evaluate the program, we have to remember that certain features of Social Security are geared toward meeting broad-based social needs rather than simply whether or not an individual is getting a good return on the dollar.

For example, the basic benefit formula is designed, and always has been, to replace a higher proportion of earnings for low earners than for high earners.

Also, there is another part of the social adequacy aspect of Social Security. Dependents' and survivors' benefits are paid to workers with families.

Because the program strikes a balance between the goals of individual equity and social adequacy, I believe we must judge Social Security's value by how well it performs as an entire package of social insurance protection.

The value of benefits for any given worker depends on his or her individual circumstances, whether that worker has high earnings or low earnings, whether that worker is married or has children, whether that worker becomes disabled, dies prematurely, or receives benefits far into old age.

Some people can expect to get back more than they put into Social Security, some to break even, and some to get less.

As the table in the back of my written testimony shows, the average worker will get more. But those who limit their analysis of the value of Social Security to how much is received in retirement benefits ignore the vitally important disability and survivors' programs.

The value of these programs cannot be overestimated. For example, over 40 percent of male workers and nearly 30 percent of female workers will become disabled or die before they reach retirement age.

The CHAIRMAN. Hold it there. That is a large number.

Mr. ENOFF. Yes.

The CHAIRMAN. Over 40 percent of male workers die or become disabled before they reach retirement age?

Mr. ENOFF. From the age of 21 to 65.

The CHAIRMAN. Does that mean that we should always expect that anybody who makes it through to 65 is one of the lucky ones, even in a——

Mr. ENOFF. Yes. They may not get their money's worth if you only look at whether they get their contributions back and do not consider the program's other aspects.

The CHAIRMAN. Yes.

Mr. ENOFF. It is like a term insurance policy. Do you get your money's worth if you live to be 100? You never collect it in that insurance aspect. So we cannot just take one aspect. And that is the point. You hit it precisely.

So Social Security disability and survivors' benefits assure workers that they and their families will not become destitute. And when we assess the value of Social Security, we have to take that into consideration.

Mr. Chairman, I am very pleased that this hearing is taking place. Social Security is an integral part of American life. Virtually the entire labor force pays Social Security taxes.

And people count on Social Security to be there for them when they retire. And they count on Social Security to be there for their families should they become disabled or die.

The American people have a right and a need to know that Social Security is still a valuable program.

So I applaud you and this committee for continuing to monitor the program's value, as well as for convening the experts who have come today to give the public their knowledgeable views.

And at the Social Security Administration, we will continue to analyze the program, not just in terms of the equity it provides to individual workers, but also as a unique social insurance program that provides vital protection to American workers and their families, especially during times of their greatest economic vulnerability.

Thank you very much, Mr. Chairman. I would be pleased to try and answer any questions.

The CHAIRMAN. First of all, there is a convention which you all use, which is a little confusing to the layman, which is that you only report the return on the individual contribution. Whereas the employer's contribution comes out of wages mostly. It is popularly seen as income.

What do you think about 80—what do the economists judge? About 80 percent of it would otherwise be wages? Mr. Ballantyne, do you have any comments?

Mr. BALLANTYNE. Well, I am not sure it would be that high. I think there is probably some disagreement as to how much it would be, but——

The CHAIRMAN. I am sure there is.

Mr. BALLANTYNE. Certainly, not all of the employer's tax would be borne by the employee in wages. I would think that some would also be passed on in higher prices to consumers of the employer's product. I would think also that profits might be lower than they would otherwise be because of the tax.

The CHAIRMAN. But isn't it properly seen as a payment? It is a payment into the worker's account.

Mr. BALLANTYNE. Many see it that way.

The CHAIRMAN. Now, wait. It is. That is how you see it? I mean, that is the way Mr. Enoff sees it, doesn't he?

Mr. ENOFF. If I might, Mr. Chairman, I think that the same principle should be involved. That employer's payment, some part of that, is counted toward the social adequacy aspect of the program.

Now, I would not argue about how much of the employer's share should be counted or should not be counted. I would say, use whatever method you want, whether it is the employee's share or the employer's share, but look at the program from its totality, not just in terms of the return on the dollar.

The CHAIRMAN. But these numbers really represent only half of the amount that Luther Gulick told Franklin D. Roosevelt was being recorded by hand on those little buff cards. Is it useful to do it that way, have a unified account?

Mr. ENOFF. Well, I think there are arguments about the employer's share and how much of it would be actually paid in wages, if it were not paid in taxes. And I——

The CHAIRMAN. Well, regardless, it is so paid into Enoff's account?

Mr. ENOFF. Yes, it is.

The CHAIRMAN. Is this something that got going a long time ago to tell people what a bargain this was?

Mr. ENOFF. I cannot tell you why it——

The CHAIRMAN. I do not know the private insurance world at all, but do they put out tables of return which only show what the employee contributes if it is a joint contributory arrangement?

Mr. BALLANTYNE. Well, I think in many private pensions, the employer pays the entire cost.

The CHAIRMAN. Most. I guess most.

Mr. BALLANTYNE. Right.

And I do not think that you can say that all of that cost is borne by the employee. I think the employees perceive it that way.

The CHAIRMAN. It seems to me, I probably should not have raised the question of how you allocate the fund. The fact is it is a contribution to an insurance program?

Mr. BALLANTYNE. Right.

The CHAIRMAN. Well, if we look at your numbers—and Senator Breaux, we welcome you as the chairman of the Subcommittee on Social Security. We are trying to sort out this always a little convoluted subject of how much are the returns on benefits?

And as you know, the celebrated Ida Fuller of Vermont, she was a Vermonter, was she not? She was $25 into the system.

And throughout, she was the first. I think there used to be an annual photograph, if I am not mistaken—I see Mr. Myers nodding—in January with some Federal official bearing an annual first check of the year to Ms. Fuller up in Buckney Hollow or wherever, Vermont. And she drew out about $22,000.

That is the necessary condition. The first German railroad retiree had the same experience.

Now, if you look at the average earnings for a single male—I do not know how many single males there are in this system—who retires this year, the person with average earnings will get back half of 214 percent if he has average earnings, and half of 171 if he is at the maximum.

Now, that is already a return that is below 100, whatever 100 means. One hundred has to be discounted for survivor's insurance and all of that, but that is already the case then, is it not?

Mr. ENOFF. Yes.

The CHAIRMAN. Mr. Ballantyne, you are authorized to speak. [Laughter.]

Mr. BALLANTYNE. I would say that one-half again is a little bit low if you recognize that not all of the employer's tax is passed on to the employee.

The CHAIRMAN. Well——

Mr. BALLANTYNE. It is somewhere in between that.

The CHAIRMAN. Are all the employer's taxes received by the Social Security Administration?

Mr. BALLANTYNE. Yes.

The CHAIRMAN. That is the point. And so already—how many single males are they in the system? And the eminent alumni of the Social Security Administration, Mr. Lopez, tells me that your table already discounts for survivors and disability.

Mr. BALLANTYNE. It takes into account survivors' benefits and disability benefits.

The CHAIRMAN. Oh, it does.

Mr. BALLANTYNE. Right.

The CHAIRMAN. How much of that is——

Mr. BALLANTYNE. Well——

The CHAIRMAN. Could you give us a round figure and then reduce it by——

Mr. BALLANTYNE. I think it is probably in the neighborhood of up to 10 percentage points for an average worker.

The CHAIRMAN. About 10 percentage points. It accounts for those who have received other benefits. That is value to you of having been covered?

Mr. BALLANTYNE. Right. I believe we compared the worker who was born in 1940 with the retirement benefit and found a difference of about 10 percentage points for the worker with average earnings each year.

The CHAIRMAN. So let's go to that fellow. How many single males—because I am struck by the fact that married couples have so much more advantage in this arrangement.

For a married couple retiring in 1993 with average earnings, I am going to cut that in half. The return is twice the contribution?

Mr. BALLANTYNE. Right.

The CHAIRMAN. Whereas for a single male, it is just about break even?

Mr. BALLANTYNE. Right.

The CHAIRMAN. How many single males are there? Would that be a—does that mean that the number of males remain single all of their lives or retire as widowers?

Mr. ENOFF. I think the married couple example, Mr. Chairman—while Mr. Ballantyne is looking for that—may be something that is not typical anymore because most married couples are two-earner couples nowadays.

The CHAIRMAN. This is a married couple in which only one person worked?

Mr. ENOFF. That is correct. And the table is showing the benefits on that basis. And so I think that is probably a comparison that is not nearly as valuable as it once was.

The CHAIRMAN. But obviously—all right. What is the number? What proportion of persons retiring this year, couples, would have had only one earner?

Mr. BALLANTYNE. We have about 2.5 to 3 million couples on the rolls because that is how many wives or husbands we have receiving benefits on the worker's account.

We have about 26 million workers. So the difference between total workers and the number of couples on the rolls would be workers only. However many of them are married to each other so you have two-worker couples.

Mr. ENOFF. I might be able to answer the question a little more clearly, Mr. Chairman. My recollection—and I will confirm this for this record—is that 33 or 34 percent of couples are one-earner couples.

The CHAIRMAN. Let's get some of those numbers for the record.

Mr. ENOFF. Sure.

[The information requested follows:]

Based on the most recent available data we estimate that about one third of couples receiving retirement benefits are one-earner couples; that is, one spouse is receiving a worker's benefit, and the other a spouse's benefit only.

The CHAIRMAN. My last comment would be that if you look at that married couple, that one-earner married couple we are talking about in 1985 got a benefit 10 times—no—five times. It is coming down fast.

Senator Packwood.

Senator PACKWOOD. I might add that Mr. Ponzi would understand this payback system himself.

The CHAIRMAN. Yes.

Senator PACKWOOD. But at some stage—I think Mr. Myers is right. At some stage, the average voter is going to say, "This isn't worth it. I'm not going to get back what I want."

And this system so depends upon the willingness of current workers to be willing to sustain the retirees that if you lose that confidence, it will collapse.

And I understand the actuarial tables. And I understand the theory, but it needs public confidence. And all of us who are in politics go out. And we go to the factories. And some young 25-year-old says, "Well, it's not going to be there when I get there."

They are beginning to lack the confidence now. And they know nothing about any actuarial tables. They just do not feel right about it. And that is a bad sign for Social Security, I do not have any question.

And I want to keep this system solid, but I do not like the lack of confidence that I see in 25-year-olds.

Mr. ENOFF. I would agree that we need to do more to educate the worker about what they are paying for in Social Security.

We have begun some efforts to do that. And they have been done over the years, but it is still something that needs more attention. And we intend to——

The CHAIRMAN. Mr. Enoff, you need to send out an annual statement.

Mr. ENOFF. I agree with that, Mr. Chairman. And we are certainly making plans to do that. I know you have been pushing that. And you are absolutely right.

There is nothing better for the person than to see in black and white what they can expect from what they have been paying in.

The CHAIRMAN. Sir, I have been 17 years in this committee. And you have been making those plans. [Laughter.]

Mr. ENOFF. Well, I must say that you put it into statute. And we will be doing it certainly by 1995. And we will be talking to you shortly about how we are going to do that and about some ideas we have that might even——

The CHAIRMAN. Why don't we hear from our new Chairman of the Subcommittee on Social Security, Senator Breaux.

OPENING STATEMENT OF HON. JOHN BREAUX, A U.S. SENATOR FROM LOUISIANA

Senator BREAUX. Thank you, Mr. Chairman.

I am delighted that you have called this hearing at the full committee level to explore some of these problems and set the ground work, if you will, for any proposed future legislative measures that may be required as we pursue this complicated situation.

I have always heard, probably before I was in Congress and during Congress, that the public's perception is that people do not get back in Social Security benefits what they pay in.

And maybe it is just a Louisiana perspective or maybe it is in other States as well, but it seems that most people do not feel they get back what they put in.

In effect, what the studies have shown and what your studies have shown is that we, in fact, get back at least as much as we pay in well before our lives are terminated under normal life expectancies.

I wonder why? Do you have any idea why so many Americans feel that they are not getting what they put into Social Security?

Is it a misconception? Is it anything that we have said as a Congress or any studies that were ever put out that gave that erroneous information that is shared by too many people?

Mr. ENOFF. I would offer this opinion, Mr. Breaux. It certainly is not scientific, but in talking to many workers and groups of workers, I think that many people believe they have paid more into the system than they actually have.

And that is again why I am going back to the chairman's suggestion that when you get a statement, you know what you have paid in. And so that helps to educate in that regard.

And I think because the contribution rate has gone up over time, people see that as meaning that they are paying more than they are going to get back, but it is a misconception. And we simply have to work on educating people.

Senator BREAUX. Not only the chairman, maybe both of you as well. I speak to some groups to try tell them of the benefits of the program, that they get back more than they put in at a relatively early age.

I see people in the audience just shaking their heads at me in disbelief. And they are almost insulted that I am suggesting that they are getting more back than they put in when, usually, they do.

What would be the effect from your perspective of an acceleration of the 1983 phase-in of a later retirement date for a Social Security

recipient on their ability to get back what they have put into the system?

Mr. ENOFF. Well, obviously if you work longer, if you accelerated the increase in the retirement age, it would take longer to recover the value of taxes paid. I do not have the numbers, but I am sure we could supply for the record what the effect would be in terms of money's worth.

[The information requested follows:]

Estimated benefit-tax ratios are attached for present law and for an illustrative earlier phase-in of the increase in the Normal Retirement Age (NRA) from age 65 to age 67. This illustrative phase-in would begin with persons attaining age 62 in 1997, instead of 2000; would include reaching an NRA of age 66 for persons attaining age 62 in 2002, instead of 2005–2016; and would include reaching the ultimate NRA of age 67 for persons attaining age 62 in 2008 or later, instead of 2022 or later.

ESTIMATED OASDI BENEFIT-TAX RATIOS UNDER PRESENT LAW

Year of birth	Single male worker earnings level			Single female worker earnings level			Married couple with male worker earnings level		
	Low	Average	Maximum	Low	Average	Maximum	Low	Average	Maximum
Retirementat age 62									
1935	2.51	1.85	1.42	2.83	2.09	1.61	4.82	3.63	2.77
1940	2.25	1.67	1.26	2.52	1.87	1.42	4.35	3.29	2.47
1945	2.12	1.58	1.16	2.36	1.75	1.30	4.08	3.06	2.25
1950	2.07	1.54	1.10	2.31	1.71	1.23	3.94	2.95	2.10
1955	2.07	1.54	1.06	2.33	1.73	1.19	3.92	2.93	2.02
1960	2.12	1.57	1.05	2.36	1.75	1.17	4.02	3.00	2.00
Retirement at normal retirement age									
1935	2.42	1.79	1.38	2.78	2.06	1.60	4.87	3.67	2.82
1940	2.24	1.67	1.27	2.58	1.91	1.47	4.51	3.41	2.58
1945	2.05	1.53	1.13	2.35	1.75	1.30	4.13	3.10	2.29
1950	2.00	1.49	1.07	2.30	1.71	1.23	4.00	3.00	2.15
1955	2.02	1.51	1.04	2.35	1.75	1.20	4.01	3.00	2.06
1960	2.04	1.52	1.01	2.36	1.75	1.16	4.06	3.04	2.02

Office of the Actuary, SSA, April 27, 1993.

ESTIMATED OASDI BENEFIT-TAX RATIOS UNDER AN ILLUSTRATIVE RETIREMENT AGE MODIFICATION

Year of birth	Single male worker earnings level			Single female worker earnings level			Married couple with male worker earnings level		
	Low	Average	Maximum	Low	Average	Maximum	Low	Average	Maximum
Retirement at age 62									
1935	2.49	1.84	1.41	2.80	2.07	1.59	4.79	3.60	2.75
1940	2.20	1.63	1.23	2.45	1.82	1.38	4.28	3.23	2.43
1945	2.04	1.52	1.12	2.25	1.67	1.24	3.96	2.98	2.18
1950	1.97	1.46	1.05	2.18	1.62	1.16	3.80	2.84	2.03
1955	1.98	1.47	1.02	2.22	1.65	1.14	3.80	2.84	1.96
1960	2.12	1.57	1.05	2.36	1.75	1.17	4.02	3.00	2.00
Retirement at normal retirement age									
1935	2.40	1.77	1.37	2.76	2.04	1.58	4.83	3.64	2.79
1940	2.19	1.62	1.24	2.50	1.86	1.42	4.39	3.32	2.52
1945	1.97	1.47	1.09	2.24	1.67	1.24	3.95	2.98	2.20
1950	1.90	1.42	1.02	2.18	1.62	1.17	3.79	2.84	2.03
1955	1.94	1.44	.99	2.24	1.66	1.14	3.83	2.87	1.97
1960	2.04	1.52	1.01	2.36	1.75	1.16	4.06	3.04	2.02

Office of the Actuary, SSA, April 27, 1993.

1. A worker is assumed to have earnings in each calendar year from the year of attainment of age 22 to the year before the earliest of the years of retirement, onset of disability, or death, inclusive. A single worker is assumed to remain single throughout life. A married couple is assumed to consist of a male worker with a wife of the same age who had no covered earnings.

2. Average earnings in any year is defined to be equal to the SSA average wage index (as defined in the law) for that year, low earnings is defined to be 45 percent of the average earnings, and maximum earnings is defined to be equal to the OASDI contribution and benefit base (as defined in the law).

3. The OASDI benefit-tax ratio is defined to be the ratio of the expected value of Federal Old-Age, Survivors, and Disability Insurance (OASDI) benefits based on the worker's earnings to the expected value of the employee portion of the OASDI taxes on those earnings. The benefits include retired-worker and disabled-worker benefits, and, in the case of a married couple, widow's benefits. If the employer portion of the OASDI taxes were included, the resulting ratios would be approximately one-half of those shown in the table.

4. Expected values are based on the demographic and economic assumptions described as alternative II in the 1992 OASDI Trustees Report (House Document 102–279). Expected values of taxes and retired-worker benefits are based on historical and projected mortality rates for the worker's age-sex cohort. Expected values of disabled-worker benefits are based on historical and projected disability incidence and termination rates for the worker's age-sex cohort.

5. The illustrative retirement age modification is defined as follows. For a worker who attains age 62 in 1997 to 2008, the normal retirement age is increased from age 65 to age 65 plus 2 months for each year from 1997 to the year the worker attains age 62 inclusive; for a worker who attains age 62 thereafter, the normal retirement age is age 67. Age 62 is retained as the earliest age of eligibility to retired-worker benefits.

Office of the Actuary, SSA, April 27, 1993.

Mr. ENOFF. Of course, these tables do incorporate the present law increase in retirement age that begins after the year 2000.

But if you accelerated that, it would bring down the money's worth calculation by some percentage, depending on when that acceleration began and how fast it might be.

Senator BREAUX. Let me read just a short of statement, a couple of sentences and ask you if you would comment on them, if you have any thoughts about it.

The suggestion is that some $60 billion could be saved over the next two decades, for example, by phasing in the retirement age of 66 by the year 2002 and the age of 67 by the year of 2008.

And even after such a change, people's Social Security benefits would continue to substantially exceed the value of their lifetime Social Security tax payments adjusted for inflation and an average rate of return on their payments.

Any thoughts about it?

Mr. ENOFF. I would have to ask our actuaries to look at those actual numbers. I have not seen those calculations.

Senator BREAUX. That is probably an actuarial question, but it also is a policy question.

Mr. ENOFF. Yes. The policy issue that one always has to look at when we increase retirement age is what those effects are for the persons who are working. We have a cohort of people who are in occupations that are physically demanding.

Between the ages of 62 and 65, now they may apply for disability or they may apply for retirement benefits, rather than continue to work, because of the physical demands.

And so you have to look at the impact when you increase the retirement age, which—that was done when the increase was enacted

in 1983. And, of course, we know that people are living longer and people are healthier in old age.

But again, it has a different impact on the individual, depending on their occupation.

Senator BREAUX. One final point then, does it have any negative or adverse effect on the contributions to the system, as far as the integrity of the system? It doesn't affect that, does it?

Mr. ENOFF. No, because the retirement age was based on longevity. And certainly, longevity is increasing. It does not.

Senator BREAUX. Thank you, gentlemen.

The CHAIRMAN. I was wondering about Senator Breaux's point, something I feel always surprised me. What proportion of present-day retirees take their retirement before age 65?

Mr. ENOFF. Something like 65 percent, between two-thirds and three-quarters, I think, retire before 65.

The CHAIRMAN. Yes.

Mr. ENOFF. And I will give you the exact number.

The CHAIRMAN. Would you do that?

Mr. ENOFF. Sure.

[The information requested follows:]

Based on the most recent available data (1991), about 72 percent of all retired-worker benefits awarded recently were to workers who began to receive benefits for months prior to the attainment of age 65.

The CHAIRMAN. Because there is this talk of having a 67. And most people are leaving at 62.

Mr. ENOFF. It had begun to level off, but there was a continuing trend towards early retirement.

The CHAIRMAN. And it evens out. I do not know what that is telling us. It could tell us that people get tired of their jobs or there comes a time when you are not really up to working on the railroad.

Or it could mean that there is a higher value of retired—there is something to do after you retire. There are places—there are retirement communities in Arizona. It is not something that that is the end of your life when you stop working. I mean, something maybe like, go to New Orleans for Mardi Gras. Why hang around Michigan?

Senator BREAUX. That will end it all. [Laughter.]

The CHAIRMAN. There is a lot of talk of what we would get out of extending the age for retirement. The fact is most people retire before they are 65. And we would not expect that to change at all, would we?

Mr. ENOFF. No.

The CHAIRMAN. And the number of people who would stay, you could make a different, a more larger penalty for retiring early, but you do not want to do that. We do not want to do that. We want people to make their own decisions. But it does show that there is a problem that Senator Breaux talks about.

And I have to say with great affection for the administration, I do not think the administration could really address this question of why there is such a lack of confidence, unless that annual statement would have been started. It would have started 25 years ago.

The Canadians have this simple little statement every year. It never occurred to them not to. And we are going to have a—this

committee has been trying to get you to use a plastic card, a permanent-looking card. You won't do it.

And I know why you won't do it because when the card began, the Nazis were first beginning to require identity cards in Germany. And you were damned if you were going to issue anything that looked like an identity card, but that was a long time ago.

Pretty soon, if Mr. Clinton has his way, everybody is going to have a health card. Now, I will tell you, that health card will not be a piece of paste board. It will be a durable card that you can carry around in your wallet.

And suddenly our Social Security card will look like a, "Where did you get that piece of paper from that you can scribble a note on?" card.

Have we ever done an opinion survey of why people—how people feel about it?

Mr. ENOFF. About the card itself?

The CHAIRMAN. No. What do you expect you will get? What do you think you will get?

Mr. ENOFF. The opinion surveys we did when we launched PEBES asked more about what people wanted to know about the system than what they expect to get back in benefits. We did ask questions in focus groups such as: Were you surprised? Did you expect more? Did you expect less?

That is the kind of the thing that we could do, I think, when we launch the new PEBES effort that begins in 1995, so that the PEBES is more responsive to the needs of the individual, more customer friendly, if you will.

The CHAIRMAN. You are going to have Senator Breaux to deal with, but have you ever gone up to Ottawa and asked them why?

Mr. ENOFF. Yes. As a matter of fact, we have had meetings with the Canadians about that and about the system they use. And, of course, their system is a little different from ours.

The CHAIRMAN. Senator Packwood, I think, would probably suggest that the Canadians are a little different, their culture.

Well, again, thank you very much. We have asked a few questions.

Senator Breaux might want to pass that paper on to you to get a comment on it.

Mr. ENOFF. Yes. We would be pleased to.

The CHAIRMAN. But we would like this to be as good a volume as has been produced on just what this subject is.

Mr. ENOFF. Yes.

The CHAIRMAN. And thank you,

Mr. Ballantyne.

Mr. BALLANTYNE. Thank you, Mr. Chairman.

The CHAIRMAN. What is it about your profession that you can just nod yes, no, absolutes. [Laughter.]

Mr. BALLANTYNE. Well, if any of the questions relate to policy——

The CHAIRMAN. We will go on now.

Thank you very much.

And now, of course, we are going to hear from the former Chief Actuary, the most eminent of administrators, Robert Myers.

And Bruce Schobel. Mr. Schobel, I think this is your first appearance before the committee. Is it not?

Mr. SCHOBEL. Yes. That is right, Mr. Chairman.

The CHAIRMAN. Well, we very much welcome you. And you are the vice president and actuary of the New York Life Insurance Co. and, of course, the co-author with Bob Myers of this most distinguished paper.

We welcome you both.

Speak as you will. We will put your statement in the record.

[The prepared statement of Mr. Myers appears in the appendix.]

STATEMENT OF ROBERT J. MYERS, CHIEF ACTUARY, SOCIAL SECURITY ADMINISTRATION (1947–1970), SILVER SPRING, MD

Mr. MYERS. Thank you, Mr. Chairman.

The matter of money's worth of Social Security benefits is very important. And it is also extremely complicated. It is somewhat like the fable of the blind persons and the elephant. As you will recall, each blind person touched a different part of the elephant and, therefore, described the elephant in quite a different way.

The consideration of money's worth is important. As Mr. Enoff said, it should not be the only consideration, but nonetheless, people certainly should not get a very bad deal as far as money's worth is concerned, or the program will lose popularity and support.

Our approach in making these calculations of money's worth was intentional done on a very simplified basis so that all persons could easily understand what we did, rather than on a complex, actuarial basis of considering numerous probabilities, such as becoming disabled or dying before age 65, having eligible dependents, and so forth.

The calculations that the Social Security Administration presented were on this latter more complicated, but really from a technical standpoint, on a more adequate basis.

The CHAIRMAN. Yes.

Mr. MYERS. In the aggregate, I think that we can well say that Social Security meets the money's worth criterion, because somewhat more than 99 cents of each dollar collected in taxes is used for benefits.

Now, we come to the other side of the matter. Should the money's worth concept be taken to mean that everybody should get their taxes back plus interest as though it were a bank account?

Well, most certainly not. This would not satisfy the social needs of the program. It would not benefit the low-income people as against high-income people, and would not supply the economic floor of protection that the program does so well.

Then, we come to perhaps one of the most important dilemmas. Should the concept be based only on the employee tax, or should it be based on the combined employer-employee tax?

Both of these concepts, I believe, have significance and meaning, as long as they are understood and adequately described.

In the aggregate, I think that it can well be said that the employer tax may be said to be paid by the employee, although one can sometimes say that only 80 percent or 90 percent is so paid.

But even if all of the taxes are paid by employees, there is still the question whether they are individually allocable to each em-

ployee. In other words, should employee A get complete credit for all the taxes paid on his or her wages by his or her employer?

I do not really think so because, like many other benefit plans, the money, although paid in the aggregate for the employees, is not necessarily equally allocated individually to each one. For example, if an employer sets up a pension plan that has an average cost of, let's say, 5 percent of payroll, this does not mean that each employee necessarily gets benefits that are worth 5 percent of payroll.

The older employee gets much more because the cost for the older employee is much higher, because he or she is nearer retirement age. The cost for the younger employee is much less than 5 percent, because that employee might leave the service of the employer before becoming eligible for a pension.

The CHAIRMAN. It is an enduring pattern of pension arrangements that the early retirees get higher rates of return. Is that not true in the private sector, Mr. Schobel?

Mr. SCHOBEL. Yes, it is.

The CHAIRMAN. The Ida Fuller effect?

Mr. SCHOBEL. That is right. The people who retire in the earliest years simply do not have time to pay for their benefits with their own contributions, but the people who retire later on do.

The CHAIRMAN. And the pattern is that that benefit is of some acceptable level regardless?

Mr. SCHOBEL. If you want to have reasonably adequate benefits, then, the earliest retirees won't be able to make sufficient contributions to pay for them.

Mr. MYERS. Yes, in the case of Ida Mae Fuller, whom I have immortalized in my book by giving the same figures you have quoted, there is also the unknown person who died back in 1940 after getting only 1 month of benefits.

The CHAIRMAN. Yes.

Mr. MYERS. Who did not probably get as much even as the small amount of contributions paid. Some win, and some lose.

So if you consider the combined employer-employee taxes, there will be some winners and some losers. It has to average out because the system as a whole is self-supporting from the taxes paid.

So some get more, as we recognize—those who retired in the early years and also the lower paid at all times. That means that some have to get less. It just has to be that way. And again, the public should be educated as to this effect.

In our study, we considered a steady worker with, alternatively, average earnings and maximum earnings. We used two mortality bases: one that we call "static" and the other called "cohort."

To translate those actuarial words into plain English, the static rates mean that we assume that age-specific mortality rates do not change in the future. Under the cohort basis, we assume that the mortality rates decrease in the future as life expectancy increases.

And this is just what is done by the actuaries of the Social Security Administration. We took their intermediate estimate for that factor. And we also used several real interest rates.

The reason that we used real interest rates for the valuation of the benefits is that this takes into account the cost-of-living adjustments. In other words, if the cost-of-living adjustments average 4

percent a year, we say the real interest rate which we will use is 6 percent minus 4 percent.

The CHAIRMAN. Did you use about a 2 percent rate for your interest?

Mr. MYERS. We used several rates, but we said that 2 percent is the best rate, as far as we are concerned. And we also said that our other best assumption was to use the cohort mortality—or in other words, improved life expectancy.

We gave various alternatives so that people who read the paper could take their choice.

In summary, let us consider the results on the basis of the combined employer-employee rates. As the chairman has said, at present, we have about reached maturity in the sense that people retiring today with maximum earnings, considering a mix of male and female lives, because we did the computations separately by sex, are just about at break-even point. In other words, considering the combined employer-employee taxes accumulated at interest at the time of retirement at age 65, that accumulation just about equals the value of the benefits. So, those people can be said from that standpoint to have bought their benefits.

Now, for the average worker, this period of maturity will be roughly 10 years from now.

The CHAIRMAN. Yes.

Mr. MYERS. I think that is a good basis for consideration, particularly if people say, "All the people who are retired today are getting windfalls. And we should not give them COLAs. Or we should cut back their benefits."

The fact is that they and their employer together have paid for their benefits—that is, for those with maximum earnings retiring currently.

On the other hand, there is value, too, in considering only the employee taxes. The questions may be raised, "Will the worker retiring 20 or 30 years from now get his or her money's worth?" This worker can be told "You are not going to get all of your employers' taxes. Some of those have been used already for people who retired in the early years or for the low paid."

On the whole over the very long range, the average worker will get more than his or her money's worth, just considering his or her own contributions.

The CHAIRMAN. But that half?

Mr. MYERS. Just the half.

And maybe because of my love for this system, I am going to walk on both sides of the street here. I want to tell the young workers, "Look, you are getting benefits that are worth what you yourself have paid. Now, you are not necessarily going to get all of your employer's contributions. Or you may only get part of them."

For the very highest paid, I would say "You may not get anything from the employer's contributions, but you must recognize that those employer contributions are pooled for the general benefit of the system—that is, for workers who retired in the early years, for low-paid workers, and so forth."

Mr. Chairman, that is a very brief summary of what is in our paper. We are very honored that you have read it and that your colleagues have read it. This will help contribute to the general dia-

logue about the Social Security system and what its underlying basis is.

Now, perhaps Bruce has something to add.

The CHAIRMAN. Mr. Schobel.

STATEMENT OF BRUCE D. SCHOBEL, CORPORATE VICE PRESIDENT AND ACTUARY, NEW YORK LIFE INSURANCE CO., NEW YORK, NY

Mr. SCHOBEL. Thank you, Bob.

I would like to say that I, too, am really honored that you chose our paper for the subject of this hearing.

When we wrote the paper about 18 months ago, we hoped that we were making some contribution to the Social Security money's-worth topic. And I guess we did.

Bob and I have worked together for a long time. And we tend to agree on almost everything. So I am not going to repeat all the points he made. I will just say that I agree with him.

The CHAIRMAN. Take your time.

Mr. SCHOBEL. All right.

There are some points that I am going to repeat because I think they are worth making. One is that from the broadest possible perspective, our society on the whole does get its money's worth from Social Security because, as the point has been made already several times this morning, less than one cent out of every contribution dollar goes for administrative expenses.

All the rest of it goes to people in the form of benefits. And so our society does get its money's worth. However, obviously, some workers do better than others.

We were not interested so much in the differences within year-of-birth cohorts. We wanted to examine the trend over time. And so we took workers who had very regular patterns of earnings and who survived until normal retirement age and then had normal life expectancy.

And we took these very ordinary-looking workers and we tried to compare them over time. They retired in different years and so on. And we saw naturally a declining money's-worth trend for all the reasons that we understand perfectly well.

The workers who retired in the earliest years, did not pay taxes for their whole lifetimes. And they did not pay taxes at the high rates that workers pay today.

And so the earliest retirees did very well. The rates have been declining. So far, they are over 100 percent.

But if you take into account both the employee and the employer taxes, we are getting very close to the critical level where I think policy-makers rightfully should be concerned because if the average worker has a money's-worth ratio under 100 percent, that says, in essence, that they could do better investing their money on their own.

And they are going to want to do that. And public confidence in the program will erode.

With regard to the employer tax, that is a subject on which even Bob and I have vacillated somewhat. You will note that our paper is a revision of one that we did earlier in 1982.

The CHAIRMAN. Yes.

Mr. SCHOBEL. In the earlier paper, we computed all of the ratios, taking into account both shares of the tax. In the recent version, we only looked at the employee tax. So we changed our minds in the last 10 years.

We basically feel that you cannot say for sure who is bearing the burden of the employer tax. And even if you were to go so far as to say that the employees in the aggregate are bearing that burden, it is not clear how much any individual employee must bear.

One way to look at this, which might be helpful, is that, if there were no Social Security and no Social Security tax, how much would every employee's salary go up? It would not necessarily be the amount of the employer tax. It could be almost any number, including zero.

We also excluded survivor's benefits and disability benefits. And we did it intentionally. One of the reasons is that we did not have the data that we would need in order to include them, but actually there is a more policy-related reason, and that is it is not clear to us that those particular benefits should be considered in a money's-worth context.

There is obviously no worker who would agree to die or to become disabled in order to have a high money's-worth ratio. They just do not do that. On the other hand, people plan to retire.

The CHAIRMAN. Put that down as Schobel's law.

Mr. SCHOBEL. That is right.

On the other hand, workers plan to retire. And they do expect to get fair returns on their Social Security retirement contributions. And so we tried to limit our analysis to the retirement program.

In addition, we used a hypothetical worker approach which does not lend itself really to considering survivor and disability benefits.

I will finally repeat the point Bob made that although the money's-worth ratio is presently above 100 percent, even taking into account the employee and the employer taxes combined, they are getting close to that critical level. And within about 10 years or so, they could drop below it. And it is a legitimate cause for concern.

And this is a very timely hearing I think.

[The prepared statement of Mr. Schobel appears in the appendix.]

The CHAIRMAN. Thank you, sir. Just two questions, if I can, to both of you. Do you discount for survivor's benefits in the way that Mr. Enoff's table does?

Mr. SCHOBEL. No. We don't.

The CHAIRMAN. You don't. So that should be taken into account.

Mr. SCHOBEL. Yes, sir. We considered only the interest.

The CHAIRMAN. Only the interest.

Mr. SCHOBEL. And there is also one other point I would just like to elaborate on on one of the questions that was asked earlier. We considered so-called single workers not because they are, in fact, single.

They could very well be married, but we think, and I think everybody agrees, that the significance of auxiliary benefits paid to spouses is going to be very small in the future.

There are not all that many today. And 30 years from now, there will be very few because both members of most married couples will have benefits in their own rights.

The CHAIRMAN. Well, then, my question is to what degree—it seems to me—I don't know how Senator Packwood and Senator Breaux feel, but it seems to me there is some disparity between what Mr. Enoff, on behalf of the Social Security Administration, shows in his table and your paper states.

His table suggests considerably higher ratios, unless I misread it, which is not hard to do in my case. I am good at misreading tables.

Mr. SCHOBEL. Well, actually, the Social Security Administration did a comparison of our ratios and their ratios, putting them on the same basis. And none of the numbers differed by more than 10 percentage points. And some differed by considerably less.

The CHAIRMAN. If we were to get—if Mr. Enoff's tables here were to be translated into yours, they would come out at about the same place?

Mr. SCHOBEL. That is right.

The CHAIRMAN. So you all are in agreement?

Mr. SCHOBEL. Yes.

The CHAIRMAN. Yes. Well, that is very important.

Mr. SCHOBEL. Actuaries always agree.

Mr. MYERS. Mr. Chairman, we have this copy of a memorandum that two of the actuaries in the Social Security Administration did. They have concluded with a table comparing side by side our estimates and theirs. In general, there is only a 3 or 4 percentage point difference in the two sets of figures.

The CHAIRMAN. Which as professional judgments can go either way?

Mr. MYERS. As for example, 127 percent against 124 percent.

The CHAIRMAN. Could we put that as an appendix to your paper? Yes, of course, we can put it into the record.

There is a smiling actuary in the room. The answer is, of course, we can. We will be happy to do it.

[The information requested follows:]

COMPARISON OF TWO ESTIMATES OF RATIOS OF PRESENT VALUE OF SOCIAL SECURITY BENEFITS TO ACCUMULATION OF SOCIAL SECURITY EMPLOYEE TAXES

[In percent]

Year of birth	Estimate of Social Security Administration	Estimate of Myers and Schobel	Difference
Single Male, Average Earnings			
1940	167	157	10
1960	152	150	2
Single female, average earnings			
1940	191	188	3
1960	175	179	4
Single male, maximum earnings			
1940	127	124	3
1960	101	96	5
Single female, maximum earnings			
1940	147	148	1
1960	117	114	3

Robert J. Myers and Bruce D. Schobel.

Senator Packwood.

Senator PACKWOOD. I have no questions.

The CHAIRMAN. Senator Breaux.

Senator BREAUX. I will just briefly welcome you all to the committee.

Mr. Myers, we certainly welcome you and recognize your long contributions to this system. You must have a great deal of pleasure in seeing the results of all of these years in a system that was designed to take care of people in senior years and in difficult times work as well as it has, since the 1930's, and know that your contributions back then helped to make all of this possible.

If we do not do anything as far as changing the current system, do the benefit ratios to contributions get better for retirees as time goes on? Does it not change? Or does it get worse?

Mr. MYERS. The ratio tends to get worse—that is, get lower for quite awhile and in the long run. It is hard to say because, on the one hand, life expectancy will likely continue to increase, which raises the value of the benefits.

On the other hand, when this occurs, the frequently scheduled tax rates may be too low. Thus, there may have to be higher taxes.

So, you have two conflicting elements over the very long run, but in general, the statement can be made that, at least for the next two or three decades, these ratios will tend to decline just by the nature of the system.

Senator BREAUX. Why am I wrong in the thought that as people live longer, they will have more time to collect what they put in and thereby get a better return as the population continues to get older?

Mr. MYERS. You are correct that that element does lead to that result, but there are the opposite elements that the normal retirement age (i.e., the earliest age at which unreduced benefits are payable) is going to increase in the future.

Senator BREAUX. It is not increasing as fast as the actual life expectancy?

Mr. MYERS. It is a somewhat parallel increase.

Senator BREAUX. Is the argument as an actuary that the changes we made in 1983 kept up with the life expectancy increases since the advent of Social Security?

Mr. MYERS. Oh, no, not since the advent of Social Security.

Senator BREAUX. Right.

Mr. MYERS. But more or less starting with, say, 1983 as the base, from that point on, they roughly keep up. Perhaps, the normal retirement age would be a little higher than 67 if it were to keep up with increases in life expectancy in the future.

Senator BREAUX. That is a question I would like to ask you. Had we adjusted the retirement age for the increase in the life expectancy each year since the advent of Social Security, approximately what would be the retirement age today?

Mr. MYERS. I believe that the figure is age 71. The Social Security Administration has made studies of this. As I recall, the figure is 71. I am assured that the figure is 71.

Senator BREAUX. So what is wrong with the picture that has 65 percent of the American public retiring at age 62 and life expectancy—I mean, the retirement age projected would be 71?

Mr. MYERS. I am rather biased on this subject. I do not think people should retire so early. And it is not just the fault of the system that people are retiring so early. It is partly the fault of employer practices. People too, have to be educated that it is necessary to get more productivity in the country. That means more people working.

Senator BREAUX. Is it also the fault of the Congress in not adjusting the retirement age?

Mr. MYERS. I think that the Congress made a good step, a rather bold step, back in 1983 when they advanced the normal retirement age on a gradual, deferred basis. I think that such action had to be deferred to some extent.

You could not make the change overnight. But at that time, there was great opposition from many people to raising the normal retirement age of 65, as though that had come down from the heavens on a stone tablet and was sacred. But I think that once that barrier has been broken, the subject is open for reconsideration as to how far it should go, or if it should rise any faster than under present law.

Senator BREAUX. Well, thank you very much. And thank you for your great contributions.

Mr. MYERS. Thank you.

Mr. Chairman, could I add just one thing?

The CHAIRMAN. Of course.

Mr. MYERS. As to this money's-worth concept, it just occurred to me, that there is one case which I can give where the person will most certainly not get their money's worth, but it does not disturb me.

Suppose you have a child movie actor aged one. And from that point on, this movie actor gets maximum earnings every year until he or she reaches the normal retirement age. Any money's-worth calculation is going to show a very bad result for that person.

The CHAIRMAN. Early earnings.

Mr. MYERS. But I think that in any consideration of money's worth, you have to be rational about it and take typical cases, and then realize that there are going to be some unusual cases that fall outside the limits, but that should not be of any great concern.

The CHAIRMAN. Mr. Schobel.

Mr. SCHOBEL. I am sorry. I will not interrupt you.

The CHAIRMAN. I think Senator Breaux's question is a very important one. Had we followed the actuarial changes—the demographic changes, we would have a 71-year retirement age instead of 65. That was Bismarck's number, wasn't it?

Mr. MYERS. Actually, that story about Bismarck is a very common misconception—namely, that we chose age 65 in the U.S. because Bismarck in the first national pension plan had age 65.

The CHAIRMAN. He did have 65?

Mr. MYERS. No, he had 70.

The CHAIRMAN. Seventy?

Mr. MYERS. Yes, but many people say 65. And I climb up the wall when I hear such statements, and I write letters to the editor.

The CHAIRMAN. I see. Well, now we have——

Senator PACKWOOD. Let me get that straight. Bismarck had 70. And was that the plan that went into effect, 70?

Mr. SCHOBEL. Yes.

Mr. MYERS. In Bismarck's plan in the late 1880's.

Senator PACKWOOD. And that was at 70?

Mr. MYERS. It was 70. Yes.

Senator PACKWOOD. So where did we get the idea of 65?

Mr. MYERS. The reason that we used age 65, as is my friend, Wilbur Cohen, and I have agreed, is that in 1934 the Committee on Economic Security and others considered various ages. Some people said 70 because there were some private pension plans that had an age of 70.

Some said 60 because Mr. Townsend of the Townsend Movement was pushing that. People wanted to retire early. Well, 65 is a nice round number and falls in between 60 and 70. And that is where we came in at 65.

The CHAIRMAN. That, sir, has the ring of truth about it. [Laughter.]

A number of decisions have been made in this room where it was 70 over here and 60 over there.

Yes, sir.

Mr. SCHOBEL. It is also worth noting that in 1916, the German system switched to age 65. So by 1935 when the U.S. system was enacted into law, then, the Germans were using 65. And so we just had——

The CHAIRMAN. Townsend had been saying 60?

Mr. SCHOBEL. Right.

The CHAIRMAN. Well, that is certainly clarifying.

One last question because we do have a record, Mr. Goss and Mr. Nichols, are either of you present?

Mr. GOSS. I am Mr. Goss.

The CHAIRMAN. There is Mr. Goss. And we have the memorandum which you very generously provided us, which is by you and Mr. Nichols from the Office of Long-Range Actuarial Estimates.

And, indeed, in this table, as you say, there is a 3 percentage point difference which is within the range of professional views on anything of this kind.

We now have a benchmark from which to discuss this matter in the future, for which we are very much in your debt, sir, as always.

And Mr. Schobel, we welcome you to this committee. I am sure we will see you again. And we thank you for a very clarifying work of scholarship and professional inquiry.

Mr. SCHOBEL. Thank you.

Mr. MYERS. Thank you, Mr. Chairman.

The CHAIRMAN. Now, you are commentators.

We are going to have a panel of equally distinguished persons, some of whom have somewhat unsettling comments to make.

Henry Aaron, looking suntanned as if he has been in a conference in the Bahamas, of the Brookings Institution. Robert Ball, an eminent expert in these matters.

Laurence Kotlikoff who is a professor of economics at Boston University and a research associate at the National Bureau of Economic Research.

And finally, Prof. John Shoven who is the Charles Schwab Professor of Economics at Stanford and comes all the way from the Bay Area for us today.

We are very pleased to have each of you here. And this is, indeed, a very special occasion.

We will follow in what is very plainly alphabetical order.

And Dr. Aaron, we welcome you, sir.

STATEMENT OF HENRY J. AARON, PH.D., DIRECTOR, ECONOMIC STUDIES PROGRAM, BROOKINGS INSTITUTION, WASHINGTON, DC

Dr. AARON. I am a strong believer in alphabetical order. [Laughter.]

I also thank you for the compliment on my tan. I only wish I had gotten it in the Bahamas, but I spent all this year either in Washington or Chicago working.

The CHAIRMAN. A wind chill effect. [Laughter.]

Dr. AARON. Perhaps, high blood pressure. Who knows?

I appreciate the opportunity to testify before this committee as always. The subject of money's-worth calculations has been around since the inception of Social Security and has also been the subject of many careless calculations and inaccuracies. Having real professionals, like Bruce Schobel and Bob Myers, doing the job assures one that the logic of the implications they use will be rigorously and correctly pursued.

I want to suggest, however that the interest and intense attention to money's worth calculations is founded on something of a misunderstanding regarding the way in which pay-as-you-go Social Security works. Notwithstanding the accumulation of some reserves, our system is still much closer to pay-as-you-go than it is to a full reserve system. And I understand that there are many definitions of reserve systems. Bob Myers has educated me on that score.

The key point to keep in mind is that over the long run, a stable pay-as-you-go social insurance system that is financially balanced, will generate a rate of return for each successive cohort of workers, equal to the sum of the rates of growth of productivity and of employment, In Social Security's terms, that rate is the rate of growth of covered payroll.

That is not a matter of policy. It is not a matter of judgment. It is a matter of mathematics. And it is inescapable.

If one accumulates the revenues collected from each cohort of workers at that rate of interest and then discounts the benefits to the retirement age, each cohort will have a benefit ratio in the terms that Myers and Schobel use of one.

The second fact arises because of the way in which Social Security operates. Some workers receive larger benefits in relation to the taxes they have paid than do other workers. This group includes low earners, women who are single. They receive larger benefits in an actuarial sense than do men who are single or high earners.

Married couples who receive spousal benefits because there is only earner or the other earner earned very little also receive systematically more than average. Others receive systematically less than average.

Since the average benefit ratio tends to one and some recipients get less than average, some ratios inevitably will be below one. Conversely some workers are going to have ratios above one.

To note that the average ratio tends to one is about as revealing, in my judgment, as the assertion that there is no free lunch or that perpetual motion machines are impossible. It contains no more information really than that statement.

The fact that some workers receive ratios higher than one and others below one, is simply a statement of the retirees' equivalent that none of us lives in Lake Woebegone where none of the ratios can be below average. Some have to be below. Some have to be above.

Now, in light of these observations, I am driven to ask, what is one to make with this interest in money's worth calculations?

I would like to focus on a few points here. First, with respect to the detailed calculations that Bob Myers and Bruce Schobel make, contrary to what they said, opinion is not divided among economists regarding the incidence of the employer-paid payroll tax.

One can go back in the history of economic literature and find all kind of views, just as one can go back and find views that the earth is the center of the solar system in physics and astronomy, but those views are no longer held.

The unanimous view on this panel and more broadly among economists who have worked in this area, is that to a very close first approximation, the employer's tax should be regarded as paid by workers.

So with respect to the Schobel-Myers calculations, just take their numbers and divide by two.

Secondly, as an aside, this is really an aside, with respect to the issue of the so-called retirement age——

Senator PACKWOOD. Can I pose just a question here, Mr. Chairman?

The CHAIRMAN. Sure.

Senator PACKWOOD. Is that premise also true then for all employer-paid fringe benefits?

Dr. AARON. In general, yes.

Senator PACKWOOD. Okay.

Dr. AARON. And that includes health insurance.

Although I have few illusions that I will be effective, I want to urge everyone to stop using the term "increase in the retirement age" to describe the change in benefits made in 1983 that take effect starting in the year 2002.

All Congress did at that time was cut benefits payable at each age without in any way effecting the age at which people could, in fact, retire.

Before that legislation, people could retire at age 62. After 2027, when the changes enacted in 1983 have taken full effect, people will be able to retire at age 62. They will just get less money. That is a benefit cut. That is not a change in the retirement age.

Now, with respect to the calculations that Myers and Schobel presented, I have a few specific comments, but I am not going to spend a lot of time on that. The first one is that the ratios are too high.

Anything based on current law is too high, given their assumptions, to which I will come presently, because the current system's revenues are not sufficient over the long haul to pay for current benefits under the actuarial assumptions used in making long-term projections.

At some point in time, maybe not soon, but at some point in time, we shall have to raise taxes or cut benefits by some amount if the underlying actuarial assumptions hold true. And that would tend to reduce somebody's ratios at some point in time.

However, I have some serious problems with the detailed calculations. First, none of the Myers-Schobel ratio concerns workers with below average earnings.

Such workers have higher ratios of benefits to taxes paid than do average earners or high earners. A balanced presentation should include below-average earners as well as average and above-average earners.

None of the Myers-Schobel ratios concern ratios of couples who receive spousal benefits. I am prepared to acknowledge this group significance is declining. It has not vanished.

Third, calculations such as theirs that omit the distributional benefits within cohorts of survivors and disability insurance are misleading.

To make such calculations is exceedingly difficult. And if it were readily possible to do, I have no doubt that the people who could do it very well would be the two who wrote the paper that is the subject of this hearing.

But we do know that disability rates and mortality rates before age 65 are related to earnings, race, and other characteristics that are relevant to calculating rates of return, even to marital status. Married men, for example, live a lot longer than single men. Interestingly, married women do not.

The CHAIRMAN. That will be the subject of another hearing. [Laughter.]

Dr. AARON. Yes. It should be many hearings, perhaps, not by this committee, but by others.

But I think the money's worth calculations are subject to a more fundamental concern than any of these technical issues.

By their very nature, the calculations focus on a set of circumstances regarding earnings, marital status, and activity at a particular age.

This method of analysis is at odds with the nature of the Social Security system. To understand why, think about a young person about to enter the labor force.

Even if single, most of them know that they are 1 day going to be married. And roughly half of those will 1 day divorce and most will again remarry.

They will have some expectation regarding whether they will be high or low earners. But if they are like most people, their forecasts are going to be off the mark. Many who will expect to earn a lot won't. And many with poor expectations will discover that fate is kind.

Few will anticipate dying or suffering disabling injury, but a sizable minority will bear one or both of those misfortunes.

For such a worker, Social Security offers insurance against each risk. Unlike the assumption of money's worth calculations, workers do not know in just what circumstance they will find themselves at age 65.

The return that such young workers will receive from Social Security includes the insurance protection, as Lou Enoff referred, the sort of term insurance equivalent against the various risks they may encounter.

To be single at age 65 is not a condition that most will anticipate at age 20. In short, the true money's worth calculation of the value of Social Security estimated late in life focuses on a point where all of these uncertainties have been resolved.

But the value of payments calculated ex ante from the standpoint of a young worker just entering the work force who is unsure of just what life holds is a more meaningful picture of what Social Security is worth.

And just as an aside, a full evaluation, a money's worth evaluation should take account of the value to retirees of the fact that Social Security benefits unlike anything else they can buy anywhere in the U.S. economy is fully indexed against price inflation.

The Social Security system is an ingenious and messy combination of insurance, income redistribution, all scrambled together. It is life insurance. It is disability insurance. It is survivor's insurance.

It is the system of cash transfers from high earners to low earners. It is a system of transfers from single people to couples, both of whose earnings entitle them to benefits from both of those groups to couples who can claim only one benefit.

Some of this redistribution, I would stress, I find desirable. Some of it, I think, deserves to be scrutinized and changed, the two-earner, one-earner couple case continues to be a problem.

I used to think that this messy combination was unfortunate and needed clarification. I wanted to sort out each element so that I and everybody else can see just what was going on: so much for disability, so much for retirement, so much for survivor's benefits, so much for welfare-type grants to low earners, so much for low or non-earning spouses.

I now think that such precision would be specious and mischievous. At various points in people's lives, the value of various types of insurance changes dramatically and fluctuates wildly.

They pass through so many conditions that the added information would not do them or anyone else much good. If I have another child, for example, the value to me of Social Security survivor's benefits goes up.

Does the value of disability benefits go down or up? Is the value of retirement insurance the same, less, or has it increased?

Providing such information is possible, but it would be informational overload. It would undermine the sense that Social Security is a social compact in which all the participants get something back, and those who do well in the labor market help a bit to carry those who do poorly.

It would encourage and abet the selfish to focus on those aspects of the plan that seem to give them the most based on their current

circumstances and to try to opt out of those aspects of the systems that help others.

By promoting self interested and often myopic calculations, such information, in my view, would work to lessen the sense of mutual and shared responsibility that the United States needs more of, not less.

For these and a variety of other reasons, I concur completely with the sentiment that you expressed in your question to Mr. Enoff, Mr. Chairman, and that is on the need to communicate more fully, information about the economic status in which people find themselves to beneficiaries.

I would suggest the most useful information that Social Security can provide to beneficiaries is information on how much they ought to be saving in order to reach retirement age with sufficient income to live in the style to which they are accustomed.

This is not information that Social Security customarily has given and, I suspect, is not part of the current mandate.

But in my experience, the misunderstanding, the misappreciation of how much one needs to save to end up with a sufficient nest egg at retirement is virtually universal.

This is something people could understand. It would be useful information. And it might even change their behavior.

If it did promote national savings, it would advance an objective for which I believe there is bipartisan support in this Congress and broad support among economists as well.

So for all of those reasons I find money's worth calculations interesting. They satisfy a certain curiosity, but in my view, they provide little useful guidance to policy-makers or to Social Security beneficiaries.

[The prepared statement of Dr. Aaron appears in the appendix.]

The CHAIRMAN. Thank you, Dr. Aaron.

We are going to go right through our panel. Then, we will have questions.

Bob Ball.

STATEMENT OF ROBERT M. BALL, COMMISSIONER OF SOCIAL SECURITY (1962–1973), WASHINGTON, DC

Mr. BALL. Mr. Chairman, I certainly agree with Mr. Aaron's reservation about these money's worth calculations done after the fact and analyzed by different subclasses, such as what does the maximum worker at the end of life have in relation to what he paid in. Looking backwards over the lifetime of that individual or the working lifetime is a distortion in a group insurance plan like Social Security.

But I wanted to introduce this reservation by reminding everyone of the extreme prejudice that we all have in favor of mathematically-stated results.

If a value cannot be put in terms of dollars and objective measures, there is a tendency—not only in studying Social Security policy—but I would say in the social sciences generally of sort of dismissing it.

If a value is very important, but cannot come up with a number, we do not think about it very much. And that is what I think happens in these money's worth calculations.

To illustrate with just four or five points, you cannot easily put into a money's worth calculation on Social Security the incontrovertible fact that Social Security which now keeps about 13 million people out of poverty substitutes in part for general revenue expenditures.

If Social Security were done away with it would require the substitution of a welfare-type program which would cost the general taxpayer considerably more than they are now paying for welfare. And the general taxpayer is the same person as the contributor to Social Security.

How do you factor in the idea that you have prevented that cost by the existence of the Social Security system?

Or take another situation in which money's worth calculations can never really deal. And that is the fact that through Social Security, young people now have pooled the risks that they have all individually been exposed to by reason of their parents' situation.

They have pooled the risk so that no one young person is completely exposed to the possibility that their parents did not save enough and the parents outlived their accumulation of wealth, are sicker than average, or in one way or another may need to move in with that younger couple, a situation which sometimes is welcomed, but, on the other hand, is frequently a restriction on the freedom of both the older person and the younger person.

That is a value that comes out of the Social Security system. And it is a value to the maximum-wage earner and the average-wage earner and everyone else that you do not get in these money's worth calculations.

Now, there is always the recognition that there are things left out, but I wanted to make some things left out very concrete.

In addition to those two, Henry Aaron suggested the point that in the Social Security's money's worth calculation, there are some things that can be done in a compulsory social insurance system that cannot be done elsewhere. Also there is a value in inflation protection that is complete no matter how high the inflation rate goes. The value is over and beyond any assumption that you make about the future movement of wages and prices.

What is a poor analyst to do, except put in an assumption about the movement of wages and prices? But the point I am making is that there is a value over and beyond that in a system that says, we will follow wherever inflation goes, 10 percent, 15 percent, wherever inflation goes not just a reasonable assumption about the future.

It is not at all certain, I think, that what Mr. Schobel said is correct—that if you come to a point where some people are not getting their money's worth according to the kind of calculations that they have been doing—which are internal to the system—that it follows that such people can do better elsewhere.

You need to test the money's worth situation against what you could buy to take the place of Social Security. Merely looking at what you pay versus what you get out is only part of the story. For example, Social Security has administrative costs that cannot be matched, only 1 percent of benefit costs compared with 5 or 10 percent of the best-run private companies, that difference represents

a real value. You can not put together the kind of package that you have in the Social Security system. That is a real value.

There is some gap between the statement that you are not getting your money's worth according to these calculations, which are all internal to Social Security, and saying you can necessarily do better privately given the same rate of return and the same degree of risk.

Social Security has paid benefits and has met every payroll for 55 years. I think it will continue to do so indefinitely into the future.

The fact that it does so, the fact that the protection follows workers from job to job so that it is added to as they go, the fact that socially, workers are not inhibited in changing jobs because of Social Security's universal coverage are all values that we cannot put a number on. They do not get into these calculations.

My only point in reciting these facts is to urge that if you find these money's worth calculations useful, at least always say to yourself as you look at them, there is a lot left out.

And I think the things that are left out, necessarily left out—I am not being critical of how people do these calculations. I would not know how to put the value I have mentioned into such calculations. They are necessarily left out, but the result understates the value of the Social Security system.

And I would just like to stress that. I have, like Mr. Aaron, a few points of a more technical nature which I make in the statement for the record, Mr. Chairman, but I would rather leave it for now at these broad points that I have made so far and invite questions when the panelists have finished.

[The prepared statement of Mr. Ball appears in the appendix.]

The CHAIRMAN. We thank you, sir. I think perhaps what you meant to say was not so much left out, as there is a lot more.

Mr. BALL. I accept your formulation with gratitude.

The CHAIRMAN. Thank you.

Professor Kotlikoff, you have been before our committee before. We welcome you back.

STATEMENT OF LAURENCE J. KOTLIKOFF, PROFESSOR OF ECONOMICS, BOSTON UNIVERSITY, AND RESEARCH ASSOCIATE, NATIONAL BUREAU OF ECONOMIC RESEARCH, BOSTON, MA

Mr. KOTLIKOFF. Thank you very much. I am honored, Senator Moynihan and Senator Packwood, to appear before you.

Let me say at the outset, I am a big fan of many of the things that Social Security does. I certainly would not want to privatize Social Security.

I think that there is a very important role that Social Security plays in providing a variety of the kinds of insurances, which Bob Ball was just describing, and forcing people to save and insure for themselves.

But I am going to be very critical of one aspect of Social Security which I think has been, to some extent, whitewashed so far in these proceedings, which is the systematic redistribution across generations that Social Security has generated.

All the insurance, forced savings and forced purchase of insurance goals of Social Security could have been pursued without also distributing across generations without taking from young and future generations and giving to contemporaneous older generations to the extent that has been done in the past four decades.

Now, we have had not only through Social Security, but——

The CHAIRMAN. You are going to tell us how.

Mr. KOTLIKOFF. What?

The CHAIRMAN. You are going to tell us how.

Mr. KOTLIKOFF. Yes. I will explain it.

We have had a huge redistribution across generations, not only through Social Security, but through a variety of other government programs, including the Medicare program, the accumulation of official government debt, and through the change in the tax structure toward a greater reliance on labor income taxes and a smaller reliance on consumption taxes.

The elderly people pay more in consumption taxes than they do in labor taxes, so this shift in the tax structure has also generated a big intergenerational redistribution.

And it was the case years back. And elderly people pay less in consumption taxes—more in consumption taxes than they do in labor taxes. So that shift in the tax structure has also generated a big——

Senator PACKWOOD. Was that statement of yours just to the generations in terms of consumption versus income? Or are you saying we generally used to pay more in consumption than we do now?

Mr. KOTLIKOFF. I am saying the share of total taxes that are coming from labor income taxes now is much higher than it was 40 years ago. And this is not just Federal taxes.

I am talking about State, local, and Federal together. There is a big redistribution going through that channel as well.

Now, you asked me how Social Security redistributes across generations? Well, it is taking both the employer and the employee contributions and handing them right over to older generations.

And these are funds that these individuals could otherwise have invested in the different financial assets that are available in the economy.

If you look at the return on stocks in the U.S. economy over the last 60 years or even over the last 30 years, the annual real return has averaged 8 percent.

So in the calculations that you have seen today, the discount rate that has been used is much too low.

And once one uses the proper discount rate, even if you use a 3-percent real discount rate, but if you do include the employer as well as employee contributions to Social Security, you get a much larger intergenerational redistribution. I don't know where actuaries get the view that they can forget about the employer's contribution to Social Security in making money's worth calculations, but it's certainly not from economists.

The bottom line is that the generation that is currently retiring is about breaking even.

The loss to the typical baby-boomer from having to be forced to be involved in the Social Security system is about 1 to 2 years of labor earnings.

This again is based on a low discount rate, a 3 percent discount rate. If you used a 6 percent——

The CHAIRMAN. Can I just ask, labor earnings?

Mr. KOTLIKOFF. Yes. If you take the typical——

The CHAIRMAN. Do you mean wages?

Mr. KOTLIKOFF. Wages. About two to three—I am trying to make——

The CHAIRMAN. Annual?

Mr. KOTLIKOFF. Annual.

The CHAIRMAN. Gross income?

Mr. KOTLIKOFF. Yes, gross annual labor income.

So the typical baby-boomer is working 2 to 3 years just for Social Security.

In contrast, generations that retired in the 1950's, 1960's, and 1970's made out very well from the system. For these generations, Social Security has produced a net transfer ranging from about 1 to 2 years of labor earnings.

I am referring here to numbers that I and John Shoven and Michael Boskin and another economist named Doug Puffert published in the National Tax Journal back in 1987. The study is "Social Security Financial Appraisal Across and Within Generations." And I would like to submit this article to the record.

The CHAIRMAN. We will put that in the record, indeed.

[The article appears in the appendix.]

Mr. KOTLIKOFF. Thank you.

These calculations are very similar to the others that have been presented today once you take into account the employer's tax contribution.

But I think the basic message that did not come across this morning is that the redistribution has been enormous. We are talking about 1 to 2 years of labor income for baby-boomers. And we are talking about 2 to 3 years of labor income for children.

So today's children are going to be spending, in effect, 2 to 3 years of their life working to pay benefits to generations that went before them.

Now, as I said, this is just one aspect of an enormous redistribution across generations that has been going on through a variety of government programs and which has not been well documented.

I would like to also submit to the record, if I may, a chapter from President Bush's outgoing budget document entitled "Generational Accounts Presentation" written by myself, together with Alan Auerbach, former Deputy Chief of Staff of the Joint Committee on Taxation and currently professor at the University of Pennsylvania, Jagadeesh Gokhale, an economist with the Federal Reserve Bank of Cleveland, and the staff at OMB.

[The information appears in the appendix.]

Mr. KOTLIKOFF. This generational account analysis looks at, not just Social Security, but all the government's tax and transfer programs and asks how are different generations being treated by those programs?

We go back to the generations born in 1900 and follow through to the generations that are born today and also think about what the generations in the future will have to pay in taxes and other transfers.

One way we described what is going on is in terms of a lifetime tax rate. To form this tax rate we take the present value of taxes that a generation will pay over its entire life less the present value of the transfer benefits it will receive and divide that difference by the present value of the generation's labor income.

If I can refer you to Table 5 which is on Page 8 of the chapter.

The CHAIRMAN. We do not have that.

I am sorry. We do have it.

Mr. KOTLIKOFF. Please look at the third column of table 6 on page 8. What you see are the lifetime tax rates for different generations.

Senator PACKWOOD. Can I ask you what that means? I am looking at it, the net tax rate.

Mr. KOTLIKOFF. We are talking about all taxes, Social Security——

Senator PACKWOOD. All State and local taxes?

Mr. KOTLIKOFF. All State and local, Federal, all taxes less all transfers.

Senator PACKWOOD. So somebody born in 1900, in their life on average will pay 21.5 percent of their income—of their net income in taxes?

Mr. KOTLIKOFF. Exactly.

Senator PACKWOOD. Somebody born in future generations are going to pay 71 percent, assuming a steady baseline of where we are now?

Mr. KOTLIKOFF. Absolutely.

The CHAIRMAN. And we are now at 33?

Mr. KOTLIKOFF. Yes. So you can see what has been going on over time is that through these inter-generational transfer programs, as well as the need to pay for government purchases which have also been rising over the decades, we have been raising the taxes on the backs of each successive generation coming along.

And this process is continuing right now and is going to accelerate into the future because of the growth of health care spending and because of demographics.

These estimates, by the way, factor in all the 75-years projections of the Social Security Administration, all the OMB long-term forecasts, and all the HFCA long-term forecasts.

So these are your government's numbers put together in this manner for you to see exactly how the government has been treating different generations.

And the story is one of a massive redistribution over time towards generations that were old in the last three or four decades and away from generations that are now young and middle-age as well as those coming in the future.

Let me conclude. I do not want to go beyond my time, but I do want to make one point about the economic implications of these inter-generational transfers.

First, they clearly hurt young and future generations because they are taking so much of their income away from them.

Generations coming in the future, even if they are only forced to pay 50 or 60 percent of their lifetime income to the government and not 71 percent, they will still face a horrendous burden.

In addition to that fiscal burden, these generations are also facing lower wages over their lifetime as a result of the fact that our policy in the post-war period of transferring to older generations has prompted these older generations to consume more in the last few decades.

Our National saving rate has, as a result, declined dramatically. Last year, it was below 3 percent.

Our national investment has also been very low. And as a result, we have not been accumulating capital at the rate we would otherwise. And as a result, labor productivity is lower. And as a result, real wages are lower.

So we hit the young and the next generation with a double whammy.

Senator PACKWOOD. Let me ask you.

Mr. KOTLIKOFF. Our net taxes are also lower, the real wages.

Senator PACKWOOD. Let me ask you a question. You are projecting here a 71 percent net tax rate. Then, with everything that President Clinton wants to do, we might be able to get it down to 59 percent. And if we get perfect health reform, we might be able to get it down to 35 to 40 percent.

But if all of that does not work well, we are going to be paying half of all the money we make in this country to the government?

Mr. KOTLIKOFF. Precisely. We are already up to 33.5 percent tax rate. And these numbers are benchmark against the national income and product account data on taxes and transfers.

So we are using all the taxes and all the transfers that are occurring in the country. We are not making up any of our own numbers here.

Senator PACKWOOD. And this is also average?

Mr. KOTLIKOFF. Yes.

Senator PACKWOOD. To the extent that somebody in the $50,000, $60,000 or $70,000 tax bracket, they may be closer to 40 percent. And somebody making $15,000, they may be closer to 20 percent?

Mr. KOTLIKOFF. Absolutely. Yes.

The CHAIRMAN. Senator Packwood, you are encouraging the witness. [Laughter.]

Dr. Aaron is visibly upset.

Mr. KOTLIKOFF. Well, the truth hurts. [Laughter.]

Dr. AARON. Nonsense hurts worse.

Mr. KOTLIKOFF. Well, this is hardly nonsense. This is—by the way, this analysis has been not only been adopted to some extent by the U.S. Government. It is also now being done by the Japanese, Italian, and Norwegian governments. So it is taking over.

[The prepared statement of Mr. Kotlikoff appears in the appendix.]

Senator PACKWOOD. Thank you.

The CHAIRMAN. Thank you very much, sir.

Mr. KOTLIKOFF. Thank you.

The CHAIRMAN. And now, Dr. Shoven. It is very generous of you to come all the way from California for this hearing. And you are the anchor person.

STATEMENT OF JOHN B. SHOVEN, CHARLES R. SCHWAB, PROFESSOR OF ECONOMICS, STANFORD UNIVERSITY, STANFORD, CA

Mr. SHOVEN. Well, thank you. I always like to bat cleanup.

I would like to begin by adding my congratulations to you and to the committee for holding this session regarding rates of return offered by the Social Security system.

For most American workers, as you know, the Social Security system is incredibly important. Most workers pay more in Social Security taxes than they pay in personal income taxes.

When they retire, for most people their right to receive Social Security benefits is their largest financial asset. It forms the financial foundation of their economic security for the rest of their life.

Therefore, American workers need Social Security to be closely monitored—and they that is what we are doing here—and they have the right to expect attention paid to it and to receive some information about it.

First, let me confirm Henry Aaron's assertion that there is unanimity among economists about the fact that the employee bears both halves of the contribution.

It makes no sense to think that there is a difference between the half that shows up on your pay stub—which is deducted before you get the money—and the half that does not show up on the pay stub.

The employer, in fact, sends all the money into the Social Security system. With the exception of the self-employed, the employee is not sending checks in. It makes no difference. The burden is all born by the workers. I think that is the unanimous view of economists.

The CHAIRMAN. If I can just interrupt and raise the nice question about truth in government. Should the entire contribution be recorded as FICA paid?

Mr. SHOVEN. Yes. And that means that the ratios that Myers and Schokel look at have to be halved. Once that is done we see that the average single man retiring today can expect to get back in benefits about 90 percent of his contributions, using a 2-percent discount rate.

That ratio gets worse in the future. I am just using their table now. In 35 years, the high-earning man will only get less than half of his money back using the 2-percent interest rate. The article that Larry Kotlikoff referred to that we co-authored with Michael Boskin and Doug Puffert had pretty much the same story.

The bottom line is that Social Security was a good deal for almost everybody who is retired now and who retired previously, but it is not going to be a particularly good deal for people who retire in the future.

Another point that Larry made, which I would largely agree with, is that 2 percent is a pretty low standard to which to hold a pension system. It is approximately the long-run, real rate of return on government bonds.

It is not, however, the rate of return on capital in the economy. It is also not the real rate of return offered by the stock market, both of which are in the 7 to 8 percent range.

For long-horizon investors, the stock market has offered higher yields than bonds consistently; that is, it is not true that the stock market over these long horizons is always riskier than bonds. In fact, it always has paid more.

So, I am saying is that 2 percent is a low standard to hold a retirement system to. And it is quite disturbing that Social Security cannot even offer that rate of return in the future.

Economists use two different models to represent Social Security. Sometimes it is looked at as a government-mandated pension system. And at other times, it is viewed as a tax and transfer system.

Which representation is more accurate? The question is, are the benefits linked to the taxes as they would be in a pension system?

Or, in fact, are they very, very loosely linked? That is, is there a strong connection between what you pay in and what you get out?

If there is not a strong connection, then, you should think of the money paid in taxes. It becomes part of your tax burden. And these taxes would distort labor supply and the economy.

If there is a strong connection, Social Security contributions are just another form of compensation. The money is deferred, but it is just like a private pension system. The workers will receive their money later and the system does not tax working.

Again which is the more accurate model? Is it like a pension system? Or is it like a tax and later a transfer system?

I think it is unfortunate that the tax and transfer system is probably more accurate, even though the Myers and Schobel analysis is consistent with the pension system model.

Myers and Schokel ask, "What do you get out compared to what did you put in?" And on average, they show that the maximum earner, single male retiring today will get back 90 percent of what they put in at a 2 percent discount rate.

But to really sort out between these two models, you would want to look at what is the marginal linkage.

That is, if I worked a little more and if I paid a little more into the system, will I get some more out? How much more will I get out for each extra dollar that I put in?

Well, for many people, the answer is zero. They would not get anymore out if they put more in. If you have a career that is longer than 35 years and you are thinking about extending it with some half-time work, your benefits do not go up for that extra work.

If you have a short career and you work less than 10 years and you work a little more, you do not get any extra benefits. If you have a spouse who has a high-earning history, much higher than yours, the marginal benefits that you get back for your working is zero.

So there are lots of people that if they contribute more, they do not get more back. Now, there are other people that do, but that linkage is often very weak.

For many workers, an extra dollar paid in results in an extra 15 cents of benefits. The extra contributions is mostly a tax. Some people get 35 cents back on the dollar.

So, we see that the marginal linkages are much worse than the 90 percent or even the 50 percent that we saw on average, looking at the total benefits compared to the total taxes.

If you look at the extra benefits for extra taxes, you get very low numbers. And so I think the tax and transfer model, may be closer to the truth.

Larry Kotlikoff, Michael Boskin, and I, once proposed a sweeping reform of the Social Security system, which would tighten the links between what you pay in and what you get out, leaving the fundamental redistributionary nature of the system in place, but making it much more systematic.

The CHAIRMAN. When did you do that?

Mr. SHOVEN. Roughly 10 years ago.

Mr. KOTLIKOFF. It was actually presented at the Greenspan Commission in 1983. And I have a—I would like to submit that as well for the record. We have a copy of that here today.

The CHAIRMAN. Please do.

Mr. KOTLIKOFF. It is called "Personal Security Accounts."

[The article appears in the appendix.]

The CHAIRMAN. Why didn't President Bush seize that opportunity?

Mr. SHOVEN. We do not know. A great mistake.

Mr. BALL. Mr. Chairman, you may remember that Michael Boskin testified before us, the national commission.

The CHAIRMAN. Oh, yes, indeed.

Mr. BALL. And none of us liked it. That should be in the record, too.

The CHAIRMAN. That is now. [Laughter.]

Mr. SHOVEN. Actually, my next point is very consistent with something you have expressed earlier today, Senator Moynihan which is that I think a major shortcoming of Social Security is that it does not keep its participants well informed as to what their situation is in the system.

A private-defined contribution system would send all participants a statement at least annually, a financial statement of where they stand. And there is no reason why Social Security should do less.

It is my view that we save far too little for the future both individually and as a country. With that, I am seconding what Henry Aaron said.

The government could use this annual mailing of Social Security statements to educate and inform people about their likely Social Security benefits, but also about the need for additional savings in order to provide for an adequate retirement.

When private financial services institutions mail you their periodic statements, they use the opportunity to promote their products. In my view, the government should follow suit. It should institute annual Social Security statement mailings which also include material promoting savings.

Let me summarize with just a few points.

The CHAIRMAN. Do you mean it should say, "Buy war bonds?"

Mr. SHOVEN. Well, that could be part of it, but also it could have some norms as to how much retirement——

The CHAIRMAN. They are not war bonds anymore.

Mr. SHOVEN. Not war bonds, peace bonds.

The CHAIRMAN. Peace bonds.

Mr. SHOVEN. Let me summarize with a few points. First of all, Social Security is not going broke. It is financially secure for the

next 40 years or more. And we will make the necessary adjustments to keep it financially secure for a much longer horizon than that.

So I want to emphasize that I am not saying Social Security is going broke. However, the rate of return offered by Social Security to successive cohorts of participants has been falling and will continue to fall.

It is no longer true that new retirees can expect benefits which vastly exceed the taxes that they have paid into the system.

In fact, single men are already in a situation where they will not, on average, get their money back using a 2-percent real interest rate as shown by Myers and Schobel.

The rate of return situation will almost certainly get worse for future cohorts. Something can be done about this, but probably not much.

As Henry Aaron suggested, it is a product of our demographic structure and our slow rate of growth of productivity.

To be fair, it is also partially a product of a system which is strongly redistributionary and which has been made extraordinarily complex to deal with special circumstances.

What can be done and what should be done is to inform system participants about their benefits and about the necessity for additional savings, either in the form of a private pension or outside the private pension system.

So if I can influence policy, even one little bit in one dimension, let me urge the Social Security Administration to move rapidly to initiate this annual statement mailing to all participants so that American workers can know more about their most important asset and also to help prepare them knowledgeably for their future retirements.

[The prepared statement of Mr. Shoven appears in the appendix.]

The CHAIRMAN. We thank you very much, sir.

And let us keep this record going. Senator Packwood recalls the Bing Crosby lyrics. I will not try the tune, but "Buy a bond today. We will be blessed if we all invest in the U.S.A." Now, it is a little thing.

Before we go to the——

Mr. SHOVEN. Try to write some new songs. [Laughter.]

The CHAIRMAN. The Canadian pension plan contributor statement, it is so simple. It comes out regularly. Ours looks like one of those Lloyds of London affairs. [Laughter.]

With a warning, this may or may not be true. [Laughter.]

But the cost of mailing, the largest cost is the stamp. And it does not happen. We have a new statute that begins biannually in 1995.

So if you were from another part of the faculty, from the Arts and Sciences at Stanford, you would be asking yourself, "Why doesn't this organization want to do this?"

Mr. KOTLIKOFF. For a good reason.

The CHAIRMAN. For a good reason says Mr. Kotlikoff. Well, Mr. Ball can respond at will and Dr. Aaron.

I wonder if we just should have our panel, which is a very distinguished one, comment on each other's statement.

Senator PACKWOOD. I have a few questions.

The CHAIRMAN. Yes.

Senator PACKWOOD. No. Let them comment, if they prefer, first.

The CHAIRMAN. Do you want to comment? Then, Senator Packwood will ask questions.

Dr. AARON. Well, I guess I would like to say just one thing. There is one true fact that I think all four of us would agree about and that is that the savings rate as a whole in the United States is lower than is desirable for long-term economic growth.

That means that if individuals save more, we would have—it would increase welfare over the long run. If the government reduces its deficit, it would increase welfare over the long run.

There is a certain inconsistency. There is a problem here about Social Security. We faced a dilemma, as everybody knows, when we started Social Security as to whether to pay relatively generous benefits early on to people who had not paid in very much or make people wait until, as under a defined contribution plan, they had accumulated sufficient benefits. We chose the former course.

That had to be financed out of taxes on current workers. We could have made the generations of workers effected by that eat all of that increase and pay for their own retirement benefits in full through a defined contribution plan. We didn't. We telescoped it forward.

Now, that means that inevitably that cost ripples forward in time. Now, the inconsistency that I note is the observation that given that commitment, given the fact that we made those commitments and paid those benefits that were not earned, so to speak, by early cohorts of workers, given that fact, we are going to have to pay that out of current production, taxes on people in some form.

We now the face the question once that decision is in the can, so to speak, what do we do looking forward? The inconsistency is this, we are somehow exploiting the future.

And yet, the assertion is being made that workers today are not earning their Social Security benefits, that—pardon me—are receiving more in Social Security than—no. Pardon me.

The statement is being made that the workers who are alive today, when they retire, will not receive in Social Security as much as they paid in taxes.

How can one simultaneously be exploiting the future and operating a system in which the current generation of workers is not paying its way—is paying more than its way?

The point that I want to get across here is that if we are going to deliver on the promises and the benefits that were given to generations that previously did not earn them, those are going to have to be absorbed in some fashion.

The calculations to which Larry has drawn attention and to which I think he is justifiably proud as an academic economist represent the detailed specificity inferences from highly dubious assumptions. The subject——

Senator PACKWOOD. Which is the——

Dr. AARON. I am referring to the generational accounts to which——

Senator PACKWOOD. The lifetime net tax rates?

Dr. AARON. Exactly. It is a good example of the observation Bob Ball made earlier that when you have a number, we tend to accord

way too much attention to it without regard to the black box from which it emerged.

Senator PACKWOOD. You do agree with these figures to date, however. Do you?

Dr. AARON. Yes, I do.

Senator PACKWOOD. Oh, you do.

Dr. AARON. The issue of calculating forward in time to the future and the entire subject of generational accounts is the subject of a symposium that will appear in the Journal of Economic Perspective. Larry and, I believe, a co-author are submitting a contribution.

Robert Haverman of the University of Wisconsin, a person of some distinction in his own right, has written a very critical commentary suggesting that these calculations are misleading and potentially subject to very serious distortion.

In the hands of an honest analyst like Larry Kotlikoff, I think, as an academic tool, they are useful for provoking interesting questions. And I hope that that is the way in which these analyses will continue, as a subject of academic debate.

The gist of Mr. Haverman's critique is that the hands of politically inspired governmental officials, the accounts are potentially a very dangerous instrument.

But let me return to the core element of agreement here which is that the national savings rate is too low.

One could make Social Security beneficiaries entirely whole in terms of the present value calculation that Larry and John Shoven have referred to in a very simple fashion. Think about it.

One could raise benefits in the future. That would raise the rate of return. That would raise these ratios.

You can choose a benefit level in the future at any rate you want to make those ratios come out sufficiently high.

That is bad policy because doing so would reduce national saving. It would increase the government deficit. We do not want to do that.

We want to move in the opposite direction to promote saving today. And that is what the focus, in my judgment, should be on, increasing national saving right now.

The CHAIRMAN. I think I see Professor Kotlikoff wishing to reply, if Mr. Ball will not mind.

Sir.

Mr. KOTLIKOFF. Thank you, Senator.

Let me just briefly say, that Henry has seriously maligned the quality of this research. And he has misstated dramatically what——

The CHAIRMAN. I must say this is one of the most polite arguments I have seen. [Laughter.]

Seriously maligned. Mind you, on the other side, he is honest, that black box. [Laughter.]

Mr. KOTLIKOFF. Yes.

I have read Robert Haverman's article that is forthcoming. Actually, he is very positive on generational accounting. He certainly does not call it misleading or the other characterizations that Henry has used.

What we are using here are the government's own projections. Generational accounting is, as Senator Bradley pointed out to Henry when he testified on the subject, very much like the Social Security long-run actuarial projections.

Only, it is not just looking at Social Security, but looking at all the government's programs and also including State and local programs, as well as Federal programs.

So if you do not like generational accounting, you should certainly throw away the trustee's annual report. And I think economists generally, maybe not Henry, get a lot of value out of that report.

The only comment that John made with which I differ is that "Social Security is not going broke."

Well, I would agree that Social Security by itself may not be going broke, but I think it is clear that the next generation is going broke, that what we have been engaged in over a period of time is systematically exappropriating the next generation through our programs.

And because we have not been doing generational accounting because we have been looking at misleading fiscal indicators, just the short-term budget deficit, I think we have been missing this fundamental fact of what has been going on with fiscal policy.

Henry is right on one issue which is that bygones are bygones. We are stuck here with a situation where our tax rate is already up to about a 33.5 percent level, given our baseline policy.

Senator PACKWOOD. Is that the part—is that part of what Dr. Aaron disagrees with? Or do you agree with what the tax rate is at the moment?

Dr. AARON. Oh, the national tax, the share of revenues going in all forms of taxes.

Senator PACKWOOD. The net tax rate as he calls it.

Dr. AARON. The total, the ratio of taxes collected at all levels of government, the gross domestic product is about 34 percent today.

Senator PACKWOOD. You agree with that. All right.

Dr. AARON. That rate is the lowest among all developed industrialized countries in the world by far, except for Japan's which is only a little higher than ours.

The CHAIRMAN. Why don't you wrap up?

Mr. KOTLIKOFF. We are heading, because of our demographics, because of the growth of these entitlement programs, towards a 71-percent rate, unless we get more out of current generations.

So I think what needs to be done is to take as our goal stabilizing that tax rate on future generations at a level that is much lower than 71 percent.

And all generations around, old, young, middle-age have got to collectively contribute to that effort.

Thank you.

The CHAIRMAN. Mr. Ball.

Mr. BALL. Yes. Mr. Chairman, I did not have a comment on this argument among the economists here. I am neither an economist nor an actuary. So I can get to say a couple of things that are needed than these professional may not.

But first, let me——

The CHAIRMAN. You are human. [Laughter.]

Mr. BALL. I would want to say though that I agree with the economists that we ought to count both the employer and employee tax. That seems fairly clear to me.

On the point that you have stressed so often about the need to send statements to individuals to inform them of the Social Security program, I agree very strongly.

I would have liked to have done it back 20 or 25 years ago. I do not think we technically could at that time, but I think the machinery now does make it possible.

But in doing that, I would like to stress not just retirement benefits, but the survivor's benefits and disability benefits which are really not understood.

Just for example—and you can use examples, even though I question some of these money's-worth total calculations. But the examples are quite striking.

If you take a 32-year-old husband earning an average wage and a wife 28 and two children aged 3 and 5, at the moment, they have a face value survivorship protection of $250,000. It is probably the biggest part of what these average earners have in the way of protection.

If you take the face value of all survivor's protection in Social Security, it is $10.7 trillion.

If you compare that with all of the private life insurance in force—meaning group insurance, term insurance, whole life, everything in force—that is $10 trillion.

It is worth, I think, people understanding, this and that the retirement system of Social Security is the only retirement system for about two-thirds of the workers in private employment.

We used to think that it was like a four-legged chair—that is Social Security, private pensions, private savings, and then underlying the whole a means tested program.

But the private pension part has not come through. Only about a third of the workers in private industry are under a private pension.

You can get up to 40 percent only if you count, as a pension, voluntary salary reduction plans for people who have nothing else. Then you get to 40 percent.

You can also get a somewhat higher number if you do not take the whole work force, but only a portion of the work force, which is sometimes done.

But I think there is no argument that it is somewhere between a third and no matter how you define it, 42 percent. And Social Security is the only pension plan for the rest.

The disability protection in force for that same young family I described is worth $221,000. These facts are just not well known, and I would say, not only on the street, not known in the Congress.

The CHAIRMAN. If I could just make a comment. I can say from my own experience. It was something I needed to know when I was 42 years old and had a wife and three children, which is that there were survivor's benefits and what they would be. And I didn't. And no one told me.

Mr. SHOVEN. I was going to try to emphasize the strands of agreement among the panel. As Henry mentioned, I think we all agree that the country needs to save more. And that translates to

individuals saving more as well as the government dissaving less, that is running a smaller deficit.

I also would tend to agree with Henry's argument that we have fundamentally still a pay-as-you-go Social Security system, the rate of return on which is driven by demographics and by the rate of productivity growth. And that makes a low rate of return on average inevitable.

I certainly would not favor raising benefits to improve the rate of return. I would favor, and actually he mentioned, in some cases he would, too, simplifying some of the redistribution, for instance, between two-earner and one-earner couples and make that rate of return more uniform while maintaining the redistribution from the wealthier to the poorer.

I return to my main point. It seems to have widespread agreement that the public should be better informed. My guess is that there is a lot of misinformation about the Social Security system.

Young people think they will get nothing. Well, they will get something. Some people probably exaggerate how Social Security will take care of them in their retirement. I think almost everybody would be better off knowing where they stand in the system.

Lastly, I would say something about what Bob Ball was talking about, about pension coverage. My guess is that the issue of pension coverage is going to surface at the political level as an issue of importance, very much like health care coverage.

The funded pension system has $3 trillion worth of assets in it now. It includes government workers. Maybe half of all workers have a claim on that $3 trillion. The other half don't. The other half do not have any funded pensions whatsoever to supplement Social Security.

And that is going to be a concern. It is going to cause inequality in retirement. The pension system is the primary method of saving in the private sector.

And I think you are going to have calls for universal coverage of pensions. And we need policies to increase that coverage to both encourage savings and to lead to a better income distribution in retirement.

The CHAIRMAN. I think Senator Packwood wants to ask some questions now.

Senator PACKWOOD. I want to make sure about this chart where Mr. Aaron agrees and disagrees. I want to go back now to this net tax rate.

You do not disagree that at the moment, we are taxing 33.5 percent of our GDP?

Dr. AARON. No. I do not have the chart in front of me. I did testify, as Larry Kotlikoff mentioned before, before Senator Bradley who chuckled appreciatively when I commented that the work was very interesting, but it was not good enough for government work.

I would like to submit for the record again the testimony that I submitted at that time, if this is——

The CHAIRMAN. Please do so.

[The testimony appears in the appendix.]

Senator PACKWOOD. I do not think there is much disagreement among the 33.5 percent. Some might say 32. Somebody might say 35. But I do not think that is far off.

I take it you do disagree with this projection of 71.1 percent for future generations?

Dr. AARON. I cannot. Actually, I would have to read the table to understand the basis of this calculation. The number I gave is a ratio of actual tax collections to GDP.

As I look at this, it appears that that is not the concept underlying this table. And I am not certain that I agree with it.

Senator PACKWOOD. But today, the actual tax collections of GDP is about a third if you count all of the governments of the United States.

Dr. AARON. That is correct. Exactly.

Senator PACKWOOD. And it has gone up from roughly 20 or 21 percent 30 or 40 years ago of all——

Dr. AARON. I do not think it has gone up that much. The Federal share of revenues has remained almost constant since about 1960.

Senator PACKWOOD. Yes, that is correct.

Dr. AARON. And the Federal share alone is now at about 18 or 19 percent. I do not think the national ratio could have been as low as that in the aggregate.

Senator PACKWOOD. All right. And let me ask you. On Page 3 of your statement, you say, "Currently, legislative taxes are insufficient to pay for currently legislative benefits, given actuarial projections of labor force, productivity growth, mortality, and other factors. Either taxes will have to be raised or benefits will have to be cut."

Assuming, we do not have any change in the present benefit structure, give me your projection of payroll taxes. How high will we have to go to finance the present benefits?

Dr. AARON. Several years ago, not so many years ago actually, 2 or 3 years ago, two colleagues and I at Brookings did just exactly that projection.

The estimate was that the cumulative increase in the payroll tax rate would come to a little over 2 percentage points, about 2.4 percentage points. In other words——

Senator PACKWOOD. Total employee?

The CHAIRMAN. By 1 year?

Dr. AARON. No. The way we did the calculation was to ask, at each point in time,—looking 75 years into the future, whether revenues and expenditures cumulated over that period differ by more than 5 percent of projected total cumulative outlays. If the system was out of balance by more than that, we assumed that Congress would close any revenue shortfall by raising the payroll tax enough to bring the system back into balance for that year's projection.

We estimated that if you did that on a rolling basis over the succeeding 75 years, you would have to raise taxes three times, each time by either six-tenths of 1 percent or seven-tenths of 1 percent. And that added to a little over 2 percentage points.

The CHAIRMAN. Well, I think it is even so the case that our present system does not anticipate any change until 2015. Seventy-5 years may be one thing, but we do not break out until 2015, 12. Leave that be.

Mr. Kotlikoff, do you want to comment?

Mr. KOTLIKOFF. Yes. Just on that point, I think that Social Security, depending on what you make of the Trust Fund and what it

is invested in, may be in pretty good shape. It may be off a couple of percentage points in terms of the tax rate, but of course, our Medicare program is way out of control.

So you take 2 points from Social Security. You add another what say? Fifteen points to Medicare. You are up 17. You add 17 points on top of 33.5 percent, and, voila, you are already at 50 percent.

You are pretty quickly up to the kind of ball park number. And this does not even take into account paying off the government's debt and the demographics.

The CHAIRMAN. Let me make just a proposition to arouse my colleague and the former chairman of this committee. I looked at the table that you presented us, sir. And you all obviously have been participating in this.

To go from about 21 percent in 1900 to 31.5 today, that strikes me as something out of the ordinary given the way societies are developing. Is it not?

I think of Medicare and on such matters, what are you going to do? I mean, in terms of government provisions, societal provisions, hospitals have always been societal provisions from the medieval times to the present. They are still called sister in the U.K.

Somewhere in the course of this century—and there is a dispute among doctors, not a very big dispute. They do not call each other names. But in which decade of the 20th century did the random patient with the random disease meeting the random doctor become better off because of the treatment?

And some say the second decade. And some say the third decade, but it is only in this century that medicine learned to do anything other than set bones. They now do extraordinary things. Well, that costs something. And we may be under some great S curve. We may not be.

But a socially provided medicine—medicine is always going to be largely socially provided. And so it is going to be taking up more of your——

Mr. KOTLIKOFF. Can I——

The CHAIRMAN. And then, you are going to have Baumol's disease. I mean, we are all reeling with Baumol's disease, right?

I mean, that doctor with his six interns making the rounds of the ward in 1920 took 2½ hours at the Columbia Presbyterian or Stanford.

And today, it takes 2½ hours. There has been no increase in productivity whatever. So it is going to increase the relative cost. I am not overwhelmed by that.

Mr. KOTLIKOFF. Can I respond to it?

Senator PACKWOOD. I want to ask Dr. Aaron a last question. You quickly added on these tax rates, "The lowest in the industrialized world." Are you suggesting there is nothing wrong if the net taxes continue to go up?

Dr. AARON. No. I am suggesting that the current tax rate should not be regarded as cruelly excessive in the United States. We may need to have somewhat higher taxes to pay for the public services we want.

We may need to have fewer public services to match the taxes that we are willing to impose on ourselves. I am just uttering the

rather banal comment that it would be a good idea if we brought them closer to one another.

The CHAIRMAN. Let's have every one of our three remaining panelists make a comment on Senator Packwood's question. And that would be our very productive morning.

Dr. AARON. I guess I would like to just add one point on the issue of health care which you dwelled on, Senator Moynihan. It is not that Medicare is out of control. It is that our health care system is out of control, of which Medicare happens to be a part.

Extrapolating the growth rates that have occurred within the medical system as a whole into the indefinite future would lead at some point in the future to the entire gross domestic product going to health care.

Clearly, that is not going to happen. We are in the beginning stages of a great national debate about that issue.

Anybody who uses assumptions stretching into the distant future that takes the current Medicare system and current projections as the basis for thinking seriously about events 20 or 30 years in the future is not using his time well.

The CHAIRMAN. Mr. Ball.

Mr. BALL. Mr. Chairman, not having to run for office, I would say I think we are an under-taxed Nation.

I think that the Germans, the Italians, the United Kingdom, the Canadians come closer to a good balance between public and private service and that we have gaps that ought to be filled. And the only way to fill them is by higher taxes. And I am sure that that is not a popular generalization.

The CHAIRMAN. No, sir. It is not. [Laughter.]

Mr. BALL. But I think we will be coming toward it as we deal with the health situation. And we need to talk about what kind of a health tax and what form it should take if we are going to do the things that are necessary at least in the short run.

Maybe longer down the road, cost controls will bring us out in a better place than we would be in the absence of a unified system.

The CHAIRMAN. Professor Kotlikoff, do you want to answer Senator Packwood's question?

Mr. KOTLIKOFF. Yes. I think anybody who is really concerned about the welfare of the country and our fiscal policy cannot but be greatly alarmed at these numbers.

I do not think these are benign in any way, shape, or form. We have here documentation of a systematic exappropriation of young and future generations that is ongoing, that needs to be stopped.

It is producing net tax rates that are already excessive, and are likely to rise much higher over the next few decades.

And any economist, I think, worth his salt would be very concerned, not only about the level that we are at now, but where we are going into the future in terms of the distortions that these kinds of taxes produce.

And if you think this is just fine, then, let's just continue the course of the last 40 years, raising benefits for elderly individuals and raising payroll taxes until we get that tax rate up to about 100 percent.

Then, we are going to see that the country is bankrupt in the way that President Clinton, I think, is very much concerned that it is going bankrupt.

There is a limit to how much we can tax our kids. It is 100 percent. We are getting pretty close to it.

The CHAIRMAN. And now for a balanced summation, Professor Shoven.

Mr. SHOVEN. I will try to give a balanced summation. Well, I would start with the observation that seems to have agreement that we do not save enough.

We are way below where we should be in national savings. To increase national savings, we will need to decrease government dissavings which means we've got to cut the deficit.

Unlike Larry, I would emphasize the deficit rather than his generational accounts. I think you have to cut the deficit.

In fact, I think you have to, within this decade, eliminate the deficit. And we could talk about whether the deficit includes the Social Security or not.

Senator PACKWOOD. If necessary, would you eliminate it by raising the net taxes?

Mr. SHOVEN. That was going to be my next sentence. I do not know of any plan to eliminate the deficit in this decade that does not require higher taxes.

I have not heard any such plan. And so, yes, I think higher taxes are inevitable.

Senator PACKWOOD. What is the guarantee that we use then to reduce the deficit?

Mr. SHOVEN. That I leave to you. I do think it is important that you come up with a guarantee.

The CHAIRMAN. I think on that note, we thank you. I am sure you join me in saying this has been wonderfully productive for us. We have heard of many ideas. We are going to have to absorb them. I think we have a record which other students and officials can use.

We thank you very much. We thank our recorder for being in his capable hands.

If there are any further questions, perhaps they could be put in writing and sent to our panelists.

I want to express our great appreciation for your coming today.

Mr. KOTLIKOFF. My pleasure.

[The prepared statement of Senator Chafee appears in the appendix.]

[Whereupon, at 12:46 p.m., the hearing was concluded.]

APPENDIX

ADDITIONAL MATERIAL SUBMITTED

PREPARED STATEMENT OF HENRY J. AARON

Mr. Chairman: Thank you for the invitation to testify before the Senate Finance Committee on the relationship between the taxes workers pay and the benefits they receive under the Old Age and Survivors Insurance program. This issue, which is as old as the social security program, is the source of much misunderstanding and confusion. These misconceptions, like trick birthday candles, seem impossible to extinguish. A realist can harbor few hopes that this hearing will sweep them away. But you are to be congratulated for the attempt.

In thinking about moneys-worth calculations and the unquenchable interest in them, it is useful to start by asking why people focus on these calculations. I see two such reasons. The first issue concerns whether whole cohorts of workers—everyone born in a given year-will get back in benefits what they paid in taxes. The second issue concerns whether workers in particular situations—defined by sex, income, or marital status—get back more or less relative to taxes paid than do workers in other situations.

The answers to both of these questions are shaped by two overall sets of considerations.

First, workers who became eligible for benefits soon after social security was created or soon after significant benefit increases were enacted could not possibly have paid in taxes enough to "earn" such benefits. It is trivially true, therefore, that the affected cohorts enjoy enormous ratios of benefits received. Robert J. Myers and Bruce D. Schobel document this fact in table 4 of their paper, "An Updated Money's-Worth Analysis of Social Security Retirement Benefits," *Transactions,* (vol. 44). The ratios are very high for 1960 and fall thereafter. Ratios for earlier years would have been even higher.

Over the long run, however, the rate of return to whole cohorts in a stable pay-as-you-go social security system inexorably tends to equal the sum of the rate of growth of the labor force, plus the rate of growth of real wages per worker. If taxes are accrued and benefits are discounted at an interest rate equal to that long run sum, the ratio of benefits to accumulated taxes will be approximately 1.[1]

Some fluctuations around this average will occur over time for various reasons. First, neither population nor productivity growth is smooth. Second, changes in benefit levels, such as the benefit reduction scheduled to begin in 2002, will tend to depress rates of return.[2] But the tendency for each cohort to receive a return equal

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[1] This statement treats the employer tax as if it were paid by workers. Myers and Schobel ignore the employer tax. This procedure is wholly indefensible, although, as they point out, the effect of this assumption can be undone by dividing their reported results by 2. The assumption they make is equivalent to assuming that workers entirely escape the burden of the employer tax. They cite standard economic theory, which holds that all payroll taxes, those paid by workers *and* their employers, are approximately borne by workers. They also refer to various other possible incidence patterns none of which is currently espoused by any respected economist, but all of which also imply that most of the burden is borne indirectly by workers. None of the economic theories of incidence they cite—or *could* cite—lends any support to the assumption they use—namely that the employer tax imposes no burdens at all on any worker. By failing to impute to workers the burden of payroll taxes, Myers and Schobel, choose to be exactly wrong rather than approximately right.

[2] This benefit reduction is usually referred to as an increase in the "normal retirement age." This description, although nearly universal, is a mischaracterization of that legal change. Also, the term "normal retirement age" is a misuse of the English language. Only a small minority of social security beneficiaries initially claim benefits at age 65; most claim benefits before that

Continued

to about the rate of growth of the labor force and of earnings per worker over the long run is inescapable. The high rates of return enjoyed by workers who paid lower taxes than necessary to sustain benefits to which they are entitled cannot persist. The fact that they do not is about as revealing as the assertion that there is no free lunch or that perpetual motion machines are impossible.

Second, because payroll tax liabilities are proportional to earnings while benefits rise less than proportionally with earnings, the ratio of benefits to taxes paid will be lower for high earners than for low earners. Because women live longer than men, the ratio will be higher for women than for men. Because the average ratio of benefits to taxes will trend toward 1, this simple fact means that the ratios will tend to be below 1 for high earners and for men than for low earners and for women. Not everyone can have ratios greater than 1, because, regrettably, we do not live in the retirees' equivalent of Lake Wobegon, where none of the ratios is below average.

In light of these observations, what is one to make of the persistent fascination with money's-worth calculations?

First, because the interest is genuine, it is good to have experts as knowledgeable and personally unbiased as Robert Myers and Bruce Schobel preparing calculations. One may quarrel with some of their assumptions—and I do—but they are clear and forthright about their methods—no games are being played—and, given their assumptions, one knows that no one will apply them with greater professional skill.

Second, ratios calculated on the basis current law are too high. Currently legislated taxes are insufficient to pay for currently legislated benefits, given actuarial projections of labor force, productivity growth, mortality, and other factor. Either taxes will have to be raised or benefits will have to be cut. Depending on which of these changes is made and when they take effect will determine which cohorts feel the brunt of the changes. But changes are inescapable unless underlying demographic and economic assumptions underlying the projections prove to be far too pessimistic. Since one cannot know when the changes will be made or what form they will take, all one knows is that the true ratios for members of some cohorts will be lower than those based on current law.

Third, projections, such as those presented by Myers and Schobel, are illustrative, but they are not representative. Almost no workers will have experiences that mirror the assumptions used in their calculations. They recognize this fact and discuss it at some length. But at least three of the deviations from real life patterns that cause ratios to be unrepresentative merit emphasis.

- None of the Myers-Schobel ratios concern workers with below average earnings. Such workers have higher ratios of benefits to taxes paid than do average or high earners.
- None of the Myers-Schobel ratios concern workers who receive spousal benefits. Such workers have higher ratios of benefits to taxes paid than do single workers or two earner couples with the same combined earnings.
- Calculations that omit the distributional effects *within cohorts* of survivors and disability insurance are misleading. Life expectancies and disability rates vary by income class and marital status. The data necessary to do exact calculations by income class, marital status, and sex do not exist. But some qualitative effects are clear. Disability rates are higher among workers with low earnings histories. By definition all disability benefits are paid to people younger than age 65. While such benefits cannot affect people who have reached age 65 and are not disabled, they are clearly relevant for all younger workers in thinking about whether social security is a good buy or a bad buy: Survivors benefits are clearly related to pre-age-65, as well as post-age-65, mortality rates. Even if each cohort gets back in survivor benefits just what it pays, not all workers in any cohort can receive survivor benefits just equal to the taxes paid to date, and the problem is clearly related to mortality rates, which vary with earnings.

Money's-worth calculations are subject to more fundamental concerns than any of these relatively technical issues. By their very nature, money's-worth calculations must posit a particular set of circumstances regarding earnings, marital status, and activity at a particular age. The analyst then calculates the ratio of benefits to taxes

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age. The benefit reduction scheduled to commence in 2002 does not alter the age of initial eligibility for benefits, which is 62 and will remain 62 after the legislative changes that commence in 2002 are fully effective. That change merely reduces the amounts that people will be paid at each age. Referring to these changes as an increase in the retirement age obstructs dear thought. It is a benefit cut—no more, no less—and has no more to do with the retirement age than would, say, a decision to deny beneficiaries cost of living adjustments.

paid, given some discount rate, or estimates the internal rate of return. This method of analysis is at odds with the nature of the social security program.

To understand why, consider the circumstances facing a young person about to enter the labor force. Even if single, most know that they will be married, roughly half of those who marry will divorce, and most of those will remarry. They will have some expectation regarding whether they will be high or low earners, but their forecasts will be poor—many who expect to earn a lot will suffer disappointment, and many with poor expectations will discover that fate is kind. Few will anticipate dying young or suffering disabling injury, but an sizable minority will suffer one or both of these misfortunes.

For such a young worker social security offers insurance against each risk. Unlike the assumptions of money's-worth calculations, workers do not know in just what circumstance they will find themselves at age 65. The return that such young workers will receive from social security includes the insurance protection against suffering disability or early death. Social security insures them against the risk of lower-than-anticipated earnings by providing relatively generous benefits if their earnings are low. To be single at age 65 is not a condition that most will anticipate at age 20. In short, the true money's worth value of social security is not the benefit ratio calculated late in life after all of life's uncertainties have been resolved, but the value of payments calculated *ex ante* from the standpoint of a young person unsure of just what life holds. Moreover, a valid money's-worth calculation should include the value of full inflation protection which is available under social security and no place else.

The social security system is an ingenious combination of insurance and income redistribution scrambled together. It is life insurance. It is disability insurance. It is survivors insurance. It is a system of cash transfers from high earners to low earners. It is a system of transfers from single people and couples both of whose earnings entitle them to benefits to couples who can claim only one benefit. Some of this redistribution is desirable, and in my view, some is not.

When I first studied social security, this messy combination bothered me. I wanted to sort out each element, so that I and everyone else could see just what was going for what—so much for disability insurance, so much for retirement benefits, so much for survivors benefits, so much for welfare-type grants to low earners, so much for low-or non-earning spouses.

I now think that such precision would be specious and mischievous. At various points in peoples' lives, the value of the various types of insurance changes dramatically and fluctuates wildly. They pass through so many conditions that the added information would not do them or anyone else much good. If I have another child, for example, the value to me of social security survivors benefits goes up; does the value of disability benefits go down? Or up? Is the total value of insurance the same or has it increased?

Providing such information is possible, but it would be informational overload. It would undermine the sense that social security is a social compact in which all who participate get something back and those who do well in the labor market help a bit to carry those who do poorly. It would encourage the selfish to focus on those aspects of the plan that seemed to give them the most based on their current circumstances and to try to opt out of those aspects of the system that helped others. By promoting self-interested and, often, myopic calculation, such information would work to lessen the sense of mutual and shared responsibility that the United States needs more of, not less.

Some will hear this comment as a plea for keeping the mass of beneficiaries in the dark so that only the priests of social security know what is going on. It is nothing of the kind. It expresses a judgment that some information is more likely to confuse and distract than it is to inform. Some analysts believe that more information is always better than less. I once did, but no longer do.

If social security were to take on an educational function, it would be far better to use the limited capacity social security has to educate and the limited attention its distributions are likely to receive than to send to beneficiaries each year information on how much they should be saving if they hope to reach retirement age with adequate income to support themselves at their normal income level during retirement. Most people don't understand how much they need to save. Social security could help educate them. This information would help people think about and plan for the future. *It might even boost national saving.*

Detailed money's-worth calculations satisfy a certain curiosity, but they provide little useful guidance to policymakers or social security beneficiaries.

ABSTRACT

Money's-worth calculations are widely sought and eagerly read. Even when done by experts, however, they provide little useful information. They ignore the fact that no potential beneficiaries can be certain at various times just what their earnings, health, or family status will be at various points during their lives. Calculations for individuals typically posit particular circumstances and for that reason do not represent the actual value of social security, which is a subtly shifting weighted average of many such conditions.

They are misleading also because they focus attention on the rate of return to whole age groups. Such rates initially are very high under a pay-as-you-go social security system. Over the long run, the returns are determined by an inescapable mathematical relationship.

The rate of return is precisely equal to the rate of growth of earnings plus the rate of growth of the working population—more simply, the rate of growth of the covered wage base. Liberalizations of law bestow higher rates of return on some cohorts of workers; deliberalizations impose lower rates.

Accumulating taxes at this rate and discounting benefits at this rate leads to a ratio of benefits to taxes of 1. Since some workers get larger returns than others, some will have ratios of benefits higher than 1 and some will have ratios lower than 1. This information is useless for planning any significant aspect of social security or for appraising the system. The fact that some ratios under specified sets of *ex post* assumptions are higher than 1 and some are lower is uninformative and a useless guide to the *ex ante* value of social security.

Attachment.

STATEMENT BY HENRY J. AARON,[3] BEFORE THE SUBCOMMITTEE ON DEFICITS, DEBT MANAGEMENT AND INTERNATIONAL DEBT OF THE SENATE FINANCE COMMITTEE

[April 12, 1991]

Mr. Chairman: Thank you for the invitation to testify on generational accounts and other issues concerning budget accounts. How statistics on government spending and revenues are presented to the public is important because it shapes public awareness and understanding of the economic effects of government operations. This issue has a long and troubled history, because the issues are complex. Regrettably, incumbent governments on occasion have misused budget accounts to conceal exactly what they were doing and the scope for manipulation is enormous. Furthermore, the presentation of budget accounts can be numbingly dull, which means that few people other than those who want to manipulate the accounts have the stomach for grappling with the technical issues.

In the course of my testimony, I shall try to make three major points:

First, official statistics on government operations are important for two distinct reasons: (1) they help the citizenry and elected officials to understand the scope of government operations; and (2) they help the population to understand what the goals of fiscal policy should be. At different times these objectives may be best served by different methods of presenting official accounts.

Second, official statistics can be used by private analysts for a variety of other purposes. The calculation of each generation's payments to and benefits from government is a worthy academic exercise and can he highly informative. But such calculations inevitably depend on assumptions about which reasonable people can and will differ. These differences will usually be large enough to determine the nature of politically sensitive findings. As a result disagreement about statistics will become the battleground for political dispute, an outcome that will obscure the political debate and debase statistics. For this reason, the government should not prepare and publish generational accounts.

Third, the estimates prepared by Auerbach, Gokhale, and Kotlikoff are interesting and revealing. But these estimates rest on a number of assumptions some of which seem to me to be clearly wrong and some of which are no more defensible than alternative assumptions that would alter the results in major ways.

Laurence Kotlikoff has emphasized in many scholarly papers that government accounts employ classifications that obscure the meaning of measures of cash flows to and from the federal government. Private transactions are equally subject to such

[3] Henry J. Aaron is the Director of the Economic Studies Program at the Bookings Institution. The views expressed in this statement do not necessarily reflect those of staff members, officers, or trustees of the Brookings Institution.

arbitrary classification. Thus, an investor who sells some assets from a portfolio realizes income and typically has to pay capital gains taxes. But the same investor who borrows against such assets, and may realize the same cash flow, qualifies for a tax-reducing deduction for interest paid. On such knowledge, lucrative legal and accounting careers are built.

The federal budget is full of items that could be classified in various ways. For that reason, the absolute deficit or surplus, and indeed the level of federal spending and revenue are somewhat arbitrary. The President's Commission on Budget Concepts, appointed in 1967 in the wake of dubious budget manipulations by the Johnson administration, grappled with this problem. The major innovations were the inclusion in the official budget of the operations of social security and medicare and prohibition on treating proceeds from borrowing against government assets as revenues.

The 1967 commission conspicuously failed to require any recognition of the contingent liabilities associated with loan guarantees, an omission whose seriousness successive administrations of both parties have demonstrated by freely issuing guarantees and leaving successors to grapple with the consequences. From a budgetary standpoint this practice might be called the Great Savings and Loan Deception, although, of course, the guaranties of the FSLIC predate recent budget conventions.

What are Budget Accounts Good For? The budget can serve two major purposes. First, it is an account of what the government is doing. Some people attach great weight to the absolute size of the federal budget. They focus on the number of dollars spent and collected in revenues, as measured by official accounts. While this practice is widespread, the absolute level of spending and taxation contains little information because, as Kotlikoff has shown, various classifications—the treatment of a receipt as tax revenue or proceeds of borrowing or the use of loans rather than loan guarantees, for example—are arbitrary and affect the apparent size of the public sector.

Most people, however, do not use official statistics this way. Rather they compare spending and revenues in one year with those in another year. Such comparisons are meaningful, despite arbitrary classifications, if the classifications remain constant over time and the relative use of various categories does not change very much. If this condition is satisfied, changes in spending or in revenues give an approximately correct picture of the change in the size of the federal government. By analogy, a thermometer may read 10° too high but correctly register changes in temperature. It is in this connection that the increasing use of loan guarantees led to a seriously misleading picture of the scope of government operations.

Many informed observers, including most of the staff of the Congressional Budget Office and the Office of Management and Budget argue that this function of the budget is the most important one. They hold that the budget should be comprehensive and include all operations of government. Excluding some activities—social security, for example--undermines this function of the budget, according to this perspective. It is this attitude, perhaps, that explains why, despite Congressional action to exclude social security from the budget, both organizations continue to prepare most prominent tabular presentations exactly as they did before Congress spoke.

This OMB–CBO view is understandable, in light of the budgetary chicanery practiced in some nations that exclude from commonly, published accounts much of what governments do. Nevertheless, I think that Congress was right to exclude social security from the official budget accounts and that the OMB–CBO view is therefore wrong. For the first three decades of its existence, social security was excluded from the budget accounts commonly reported in the press and featured in presidential budget statements'. This exclusion did not disturb the fundamentally conservative management of social security. Nor did it cripple fiscal or monetary policy, because officials in the Treasury, the Federal Reserve, and other agencies charged with administering economic policy, having mastered elementary addition, were fully capable of using the national income and products account budget or other compilations relevant to the particular problems they faced. The current generation of officials is no less capable. Nor did the exclusion of social security from the budget hamper rational decision making on national defense or domestic spending. It will not do so today.

The second major function of the budget is to educate the public on the balance of spending and revenues that will advance long-term economic growth. Given private saving, the United States can achieve sufficient national saving to sustain basic economic growth *only if the federal government runs a surplus on its total operations approximately equal to the excess of social security revenues over social security outlays projected under current law.*

I believe that the most important function of budget accounting is to help achieve the objective of restoring adequate national saving. I suggest that if the goal of an

overall budget surplus equal to the annual accumulation of social security reserves makes economic sense, the chances of achieving it are a bit better if social security is excluded from the budget than if all operations of government are reported together. If social security is excluded from the budget, the long run goal is approximate balance on the remaining operations of government. If social security is included in the budget, the public must be persuaded that it should run a persistent annual surplus of a few hundred billion dollars. I believe that most elected officials would find the chances of achieving and sustaining public support for a balance in the budget" better than the chances of sustaining support for a surplus of a few hundred billion dollars.

It would be silly to exaggerate the importance of budget accounting in reaching this goal. Achieving balance on the overall budget, even with social security included, is proving to be too large a task for our political system. But the target of overall balance retains some heuristic value. The only chance of achieving adequate national saving, short of a dramatic shift in private behavior, will be if the federal government preserves currently projected accumulation of social security reserves and manages approximately to balance the budget for the remaining operations of the federal government.

Are Generational Accounts Useful, and Should the Federal Government Compile Them? My answers to these questions are, respectively, yes and no. Much has been written about generational conflict and the alleged burdens that the baby-boom generation is imposing, or will impose, on other generations. Some have alleged that the baby-boomers have been short changed because public spending and job opportunities have had to be stretched over larger-than-normal cohorts, resulting in fewer benefits and opportunities per person. While demographic shifts cause major changes in many aspects of the economy, one reasonable way of looking at whether any group in the population imposes burdens on others is to calculate whether that cohort consumes more over its life time than in produces. If a group consumes more than it earns, it imposes burdens; otherwise, it does not. This calculation can be split into two parts, for private consumption and public consumption.

Auerbach, Gokhale, and Kotlikoff present an estimate of the balance of public consumption. They ask whether, under current policies the various groups alive at a given date will pay more or less in taxes than the value of public services they receive. Asking whether various age groups are paying their way or not is exactly the right question. Their estimates are interesting and informative. Their results broadly interpreted indicate that older generations alive today are paying less in taxes than they are receiving in public services. As a result, given their assumptions, the authors estimate that younger generations alive today will have to pay more in taxes than they receive in benefits.

Any such calculation must rest on a host of assumptions. Some assumptions are technical in character and experts can agree on them. Others have little effect on the results. For example, one has to decide on whether to treat children as independent units or as part of parental units. However this matter is decided will have little effect on the calculation of the kinds of trends in generational accounts with which the authors are concerned.

But the calculations depend sensitively on many assumptions that reasonable people will dispute. The present value of total future tax payments depends on three critical assumptions: the growth of income against which taxes will be levied, the evolution of tax rates used for computing liabilities, and the discount rate used for reducing the resulting nominal taxes to present values. Since the calculation of generational accounts stretches more than 100 years into the future and the power of compound interest is staggering, the choice of assumptions is critical. Let me illustrate the point. In the past three decades, annual growth of real worker compensation has ranged from 2.0 percent over the period from 1980 through 1978 to −0.3 percent over the period from 1978 through 1990. By the year 2100 wages will be nearly eight times larger if growth returns to 1.9 percent than they will be without growth. I really don't know whether the plausible range of assumptions about the growth of employee compensation is larger or smaller than the historical record over the last three decades. But I would caution that we would smile tolerantly had analysts working during the presidency of Ulysses S. Grant to try to forecast wages of workers in 1990. That time span is the same as the one separating us from the year 2100. Projections based on plausible assumptions can be informative and may be necessary for program purposes. But it is easy to take them too seriously.

Over just the last three decades, the United States has replaced an income tax system lacking any adjustments for inflation with one that contains full indexing for nominal quantities but none for capital transactions. Legislated payroll tax rates rose sharply as the baby boom turned into the birth dearth. Personal and corporation tax rates dropped sharply. Virtually every developed nation other than the

United States adopted a value-added tax. To assume continuation of current law is not a neutral assumption, and it is outrageously implausible. We know, for example, that medicare is drastically out of balance and that Congress will have to either cut medicare benefits or raise payroll taxes. The one policy that we know cannot persist is current policy. But that is the one Auerbach, Gokhale, and Kotlikoff use. Which of the infinity of possible alternatives is most reasonable? Quite simply, no one knows.

Implicit in the calculation of generational accounts must be a path of wages and a tax system. The choice of alternatives determines whether a given cohort will pay more or less in taxes than it receives in benefits. The pattern shown in Auerbach, Gokhale, and Kotlikoff's tables 1 and 2 could be reinforced or reversed depending on the assumptions one makes regarding future growth rates of wages and changes of tax laws. To say that these critical quantities cannot be known with certainty is more than understatement. The truth is that we haven't a clue about growth rates of wages or taxes decades into the future.

Whatever nominal tax flows result from these assumptions must be discounted to present value. This choice of a discount rate is critical principally because of social insurance. People typically pay taxes early in their lives and receive benefits late in their lives. If one uses a low discount rate benefits will appear large relative to taxes. If one uses a high discount rate benefits will seem small. But what discount rate should one use? Disregarding inflation, responsible arguments could be advanced for rates as low as 2 percent and as high as 10 percent or more. The effect of this choice is enormous . . . .

I have dwelled on the wide range of plausible assumptions regarding wages, taxes, and the discount rate and on the sensitivity of the results to the choice of assumptions. Equally fundamental problems arise with respect to expenditures, the level and composition of which has changed profoundly and will continue to change. To assume that the current level and composition will persist is technically easy to do and utterly without justification.

One additional assumption used by Auerbach, Gokhale, and Kotlikoff deserves to be noted. They assume that cash flows of the government must be balanced within the time period they analyze, except for relatively modest assumed changes in the growth of public debt. That means that most of any difference between outlays and receipts of any one cohort must be offset by an opposite imbalance of some other cohort in their projection period. This assumption is arbitrary. There is no reason to think, for example, that the current federal debt, the result largely of fiscal imbalances incurred during the lives of people now living will every be paid off. Each cohort can receive more than it pays. That would be bad policy, but it can go on forever if national income grows faster than the accumulated debt.

One might reply to my comments by saying that in order to do calculations of generational accounts one has to make some assumption. True enough. The implication of that rejoinder, however, is that calculating generational accounts is a worthy academic activity, but that official agencies should not calculate them. Since there is no way to select rationally among alternative assumptions and the selection of assumptions determines the results, calculation of such accounts would inevitably become the focus of political struggle masquerading as analytical debate. Such an outcome is lethal to the continued acceptance of official statistics as the product of neutral and objective calculation.

Do the Specific Estimates Presented by Auerbach, Gokhale, and Kotlikoff Make Sense? The central finding of the authors, in my view, is that current policies provide people now alive with current benefits from government services far in excess of what they are paying for those services and that someone some day is going to have to pay for that excess. I pretty much knew that from the deficit, even after allowing for the undoubted conceptual flaws in budget accounts. But the projections of who will pay for the current excess and when they payments will be made are not informative. The pattern is highly dependent on assumptions that could reasonably be varied, as I have just indicated. To underscore my criticism, I shall focus on projections of the balance between payroll taxes and the benefits these taxes finance, old-age, survivors and disability insurance (OASDI), hospital insurance (HI), and unemployment insurance (UI). Assuming a discount rate of 6 percent and a growth rate of 0.75 percent, the authors find that males aged 20 in 1989 will pay payroll taxes with a present value of $66,200 and receive in return OASDI benefits worth $9,100, HI benefits worth $2,900, and UI benefits worth $1,100, for a total return of $13,100 and a net loss of $53,100. One has to wonder how 20 year olds can be projected to get back benefits worth one-fifth of the taxes they pay from a system that official actuarial projections indicate will pay out more in benefits than will be collected in revenues. After all, OASDI has a small projected deficit, HI has a huge projected deficit, and nobody even tries to project the balance in UI.

What is going on? The answer is technical, but simple. Auerbach, Gokhale, and Kotlikoff use a 6 percent discount rate; the actuaries use a 2 percent discount rate. The relatively low discount rate of the actuaries necessitates far higher taxes to pay for given benefits than would be required if they used a high interest rate that would make future obligations seem small. The high discount rate used by Auerbach, Gokhale, and Kotlikoff shrinks the present value of legislated benefits, making payroll tax financed systems, widely seen as inadequately funded, seem to be awash in surpluses.

If one accepts this discount rate, one can reach either of two extreme policy recommendations. Either payroll taxes can be cut drastically, because future obligations are far smaller than most of us had supposed; or social security is a monumental rip-off and should be repealed. The obviousness of such inferences, however unwise both may be, guarantees that such technical assumptions would become the battlefield for political wars of great ferocity.

In the end, I conclude that Auerbach, Gokhale, and Kotlikoff have produced a technically sophisticated extrapolation of a variety of assumptions that help increase one's sensitivity to the implications of current fiscal policy for future generations. If I were reviewing their manuscript for publication in a professional journal, I would make a number of criticisms and urge a variety of revisions, but I would recommend it for publication without hesitation. But you asked me to review this set of accounts from the standpoint of suitability for official use. Without being facetious, I don't think its good enough for government work.

PREPARED STATEMENT OF ROBERT M. BALL

Mr. Chairman and members of the Committee. My name is Robert Ball. I was Commissioner of Social Security from 1962 to 1973. Prior to my appointment by President Kennedy, I was a civil servant at the Social Security Administration for nearly twenty years. Since leaving the government, I have continued to write and speak about Social Security, health insurance and related programs. I was staff director of an Advisory Council on Social Security to this Committee in 1948 and a member of statutory Advisory Councils in 1965, 1979 and 1991. Together with the Chairman and several members of this Committee, I was also a member of the National Commission on Social Security Reform. This was the Commission whose recommendations served as the basis for the important 1983 Amendments to the Social Security Act. I am currently the Chair of the Board of the National Academy of Social Insurance.

There is an understandable tendency in analyzing public policy issues—in fact in the social sciences generally—to give great weight to what is measurable. We want to study what can be mathematically stated and are quite skeptical of assertions about values that do not have numbers attached to them. Yet the ability to attach numbers to some values and not to others does not necessarily represent their relative importance. It is true that the numbers make it easier to communicate with each other about some aspects of a problem, but leaving out the unmeasurable may lead to major distortion. And once numbers are produced they take on a life of their own and are understood as *the* answer to the policy issue posed, no matter how careful one may have been to qualify the answers, usually in footnotes, in the original presentation.

I think something like this is what happens in all these attempts to measure money's worth under Social Security. All such studies have to leave out some very important but unmeasurable factors because, by definition, numbers can not be assigned to these factors. The result is a systematic understatement of the value of Social Security in all money's worth analyses. So keep in mind as you look at the Myers/Schobel figures or any other money's worth numbers, that there is a lot left out. Social Security is much more valuable than these numbers show—more valuable to each of us including the maximum wage earners and more valuable to society as a whole.

For example, Social Security is now keeping over 13 million people out of poverty. Without Social Security, the general taxpayer would have to put much more money into welfare. How do you take account of these savings in calculating what Social Security is worth? The answer is you don't, but clearly the general taxpayer, who is also the Social Security contributor, has an important unrecognized offset here.

Closely related to this is the value arising merely from the fact that we live in a society that has planned ahead and protects the income of the elderly, the disabled, widows and orphans in a way that respects their dignity and independence and keeps them from becoming entirely dependent on public or private charity. Having such a system based on past earnings and contributions of the workers in the

family makes our society better and more civilized for everyone. It reinforces efforts to work and save and emphasizes the earned right to benefits that can not be achieved by a welfare system. Social Security is a system of family protection promoted by the community but relating eligibility and the amount of protection to individual effort. And it deliberately gives more protection for what they pay to low wage earners so that they can, in most cases, have at least a minimally adequate income without turning to means-tested assistance, which they would have to do much more often if benefits were kept strictly proportional to past earnings. How do you put numbers on the social utility of such a system? And yet we all benefit from it.

And those of working age benefit from Social Security not only because of what they will get individually in relation to what they have paid in individually but also because they are now pooling with all other workers a major part of the support of their parents. How do you put a figure on the protection that Social Security gives *young* people against the cost to them of parents who live much longer than average, are sicker than average, have saved little or for some other reason, in the absence of Social Security, would need to move in with their sons and daughters? With Social Security no son or daughter has to bear the full risk of the exceptional but not unusual happening to them. These risks for all young people are pooled together. There is certainly value here in the independence of both young and old alike that is not recognized in money's worth calculations. These unmeasurables are of great importance.

The comparison of accumulated contributions plus interest to the present value of benefits at retirement also leaves several other factors out of account. For example, the real test should not be simply this abstraction but what else would realistically be available to the individual as an alternative to Social Security that carries the same rate of return with the same degree of safety. What would an insurance company have to charge to guarantee the same kind of protection as provided by old age, survivors and disability insurance? There is no such comparable plan for sale nor realistically could there be with the same degree of inflation protection and combination of benefits. Yet this is the right test; what is the alternative, not simply what you pay in and are expected to take out. In the absence of comparing Social Security with something now sold, what about comparing it with a series of private insurance alternatives? It is one thing to compare accumulated Social Security contributions with the present value of certain Social Security benefits and something else to say "How much would it cost to buy this or that part of the insurance protection from a private company? Such an attempt would make it clear that you can't put together such a package and that to the extent you can there are advantages in Social Security—for example, administration costs of only 1 cent out of every dollar of benefits compared to several times that for private insurance—that are not revealed by comparing social security benefits and contributions for selected groups of Social Security beneficiaries. The unique ability of a compulsory social insurance system to provide this package of benefits is also a value missed by the money's worth calculations.

Or one could set up a theoretical alternative to evaluate Social Security against, and say supposing people had to accumulate the same contributions and seek ways to invest it that would be designed to come as close as possible to providing the same protections." Under such a theoretical scheme would people be allowed to make bad investments and lose their contributions altogether or receive a very low rate of return? If they ended up in retirement without an adequate income how would the rest of us finance their subsistence? The fact that Social Security has never missed a payday in 55 years of paying benefits and in all likelihood never will, that its financial viability is not tied to any one company or industry are all values that need to be considered, but are not measurable.

And additional points need to be given Social Security for the kind of system it is with its special advantages for both workers and the economy. Social Security does not tie anyone to a particular job because the protection picks up fully on every new job, and no other plan provides the same lifetime protection against total disability and the death of a wage earner regardless of job change or deterioration in health. How do you express value when there is nothing else to compare it with?

The same reasoning applies to the inflation protection provided by Social Security. The value of Social Security's protection against inflation has to be measured by assumptions about the "likely" rate of inflation, a best guess. What else can an analyst do? But in Social Security there are guarantees against inflation no matter how high prices may go—10 percent, 15 percent and so on. How measure having this protection against an undefinable risk that no other plan can offer? And yet this unlimited protection is clearly more valuable than any best guess about a future inflation rate. And Social Security guarantees a fixed wage replacement at the time

of retirement no matter how high wages may go. There is a value to the protection here also that goes beyond a calculation based on reasonable assumptions about the movement of wages and prices.

As you can see by now, I am skeptical of these money's worth analyses, but there is still another reason for skepticism that goes to the kind of methodology the analysts are forced to use. All analysts, including Mr. Myers and Mr. Schobel, select sub-groups for analysis based on status determined at the end of a working career or at the end of life. Thus, for example, male workers at the time of retirement are separately analyzed depending on whether they earned the maximum amount possible under Social Security or whether they had average earnings. But the value of their protection is not correctly calculated after the fact. The concept in a huge group insurance plan like Social Security is whether the payments cover the risks for the entire group. No one knows until later who is always going to earn the maximum, for example, who will get married, who will have children and so on. Many mid-level managers of big companies who expected always to earn the maximum are now looking for jobs. Is the value of the protection related to taxes paid for them one number when they confidently expected to earn the maximum throughout their working lives and a higher number because of the weighted benefits formula now that they are unemployed? Or should the calculations of the value of the protection have always taken into account the risk of having less than maximum earnings in every year? It seems to me the determination of whether or not people get their money's worth needs to anticipate all the risks that can affect the amount of protection provided—how much will they earn, will they have dependents, will they become disabled, will they die before reaching retirement age, etc. These are all real factors that are related to the protection afforded throughout a working life. Waiting until retirement and making a determination retroactively according to who actually suffered what risk is a distortion made necessary, perhaps, by both lack of data and the complexity involved in doing he calculation correctly. Once again we get what we can measure. But it is just not right to say that the value of the protection for the single male worker who earned the maximum is so and so. The value of the protection for a worker involves an evaluation of the *possibility* of his being a maximum earner not the *certainty,* established after the fact. When he pays in, there are many risk factors that are unknown, including this one.

And there are other problems. Do you make the analysis assigning the entire employer contribution to each individual employee because in the aggregate Social Security, like other fringe benefits, is part of compensation, or do you recognize realistically that in the absence of an employer tax, wages would not necessarily increase at exactly the same rate for each employee?

Now *illustrations* are possible and useful. It is possible to say, for example, that a young family made up of a husband 32 earning average wages and a wife 28 with two children aged 3 and 5 have at a particular moment survivor's protection worth *$250,000.* It would be the same if the wife were the wage earner. If they both earned average wages survivors would get $250,000 worth of benefits if either died. It is even possible to say that the face value of all the survivors benefits under Social Security equals *$10.7* trillion in 1991 compared to *$10.0* trillion for all the private life insurance protection in force, and it is possible to take the same family and say the disability protection is worth *$221.000,* although it is not possible to guarantee that their health status would allow them to buy the protection from a private company.

And it is, of course, possible to illustrate the value of retirement protection by taking a 40 year old, looking at his or her past wage record asking him or her to guess what they will earn from now on and compute what their retirement benefits will be if their guess turns out to be right. Or take a 50 year old, a 60 year old or someone about to apply for retirement benefits and do the same thing. In fact, the Social Security Administration will do this for you now if you ask them to. And, of course, you can, if you are an actuary, express the present value of the retirement benefit by taking account of your life expectancy and by assuming a given level of interest rates for the future, compute what you have paid in, accumulate the contributions at interest and compare the two calculations. But it would be an error to take these illustrative values related to a particular point in time and try to draw conclusions about the lifetime money's worth of Social Security protection, even leaving out all the unmeasurable values previously discussed.

Then, too, there are some points that need to be considered about the specific Myers/Schobel analyses. (1) Only the OASI portion of the OASDHI tax rate has been included in the analysis since disability and health insurance are not considered on the benefit side, but actually the OASI portion of the tax is now "too high" compared to the DI portion. In 1983, 0.50 percentage points of the DI contribution rate were shifted to OASI. Some of the rate perhaps 0.25 points now needs to be

shifted back. Consequently all the tax figures shown for the OASI rates are higher than they should be and the ratio of benefits to taxes is understated.

(2) The hypothetical average and maximum earners are assumed to have no periods of unemployment or periods when they earn less than average in one case or the maximum in the other. As the authors say this is not a typical earnings pattern. If they developed a typical wage pattern, as they say on p. 56 of the pre-print of this analysis in a pamphlet issued by the Society of Actuaries, somewhat lower taxes would be paid, but benefits would be about the same. The overall effect, they say, might be an increase in the benefits/tax ratio of 10–20 percent relatively.

(3) Similarly, as the authors point out, there will not be many people in the future who always earn the maximum. Many may have the maximum for the 35 years used in the benefit calculations but are unlikely to pay in at the maximum amount for say the first ten years of their working life. Thus the ratio of the value of the benefits to taxes should for this reason be higher than shown. They say, by perhaps 5–10 percent relatively.

(4) Moreover, in the calculations no value was attached to the possibility that one spouse may have a residual benefit based on the other spouse's earnings in addition to each member of the couple having a benefit based on their own wage record.

(5) Nor, to simplify the calculations was any retiree assumed to have children entitled to benefits.

All in all, it looks as if the benefits/tax ratio of these calculations could be as much as a third larger, showing a calculation for the average worker into the future equal to benefits that have a value equal to or better than the employer and employee contribution, and the value of the benefits for the maximum earner considerably higher than the workers own accumulated contributions. This is without taking account of the unmeasurable factors I first discussed.

As long as critics and students of the Social Security system raise these questions of whether or not particular workers get their money's worth under Social Security, I suppose it is possible to argue that it is desirable for knowledgeable and distinguished actuaries, such as Mr. Myers and Mr. Schobel, to do the best they can to develop mathematical answers to the questions. They, at least, avoid some of the gross errors frequently found in these analyses.

But I am not so sure. The result of the limitations of the analysis is to systematically understate the value of Social Security protection and lead to erroneous conclusions about whether or not some people get their money's worth. These numbers are going to be around now for a long time and they are backed by the prestige of the authors. It's too bad we can't just forget the attempt to put numbers on the money's worth question when there are so many important unmeasurable factors involved. But if calculations are to be made why not stick, at least, to the two consistent approaches of either following a given age cohort throughout life, prospectively or retroactively when the members of the cohort are all dead? The separate analysis of wage earners selected by earnings levels and followed only to retirement and then using present value as a substitute for following the workers until death seems to me too misleading to be useful. I would prefer telling people money's worth for high earners just can not be calculated because, among other reasons, it leaves out of account the fact that anyone may turn out not to always be a maximum earner (ask middle-management employees recently laid off) and, because of the weighted benefit formula, get more for what is paid then the calculations show.

Taking everything into account, Social Security, looked at as the group insurance plan, is a good deal for everyone. The Social Security Administration estimates that those 15–19 years old in 1992 will get benefits equal to 102 percent of the taxes paid in by both employees and employers, using an interest rate of 2.3 percent, At a 2 percent rate the benefits/tax ratio would be somewhat better. Of course, at the end of life it is possible retroactively to compute that some got more protection than others in comparison to what they paid in. An irreverent but proper response is "so what?"

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PREPARED STATEMENT OF SENATOR JOHN H. CHAFEE

Thank you Mr. Chairman. I want to commend you for holding this hearing today.

The Social Security Program plays an important part in the lives of almost all Americans. Since President Franklin Roosevelt signed Social Security into law in 1935, it has worked according to plan—a contract between workers who pay the government an earnings tax that is redeemed during their retirement. Today, spending on the program comprises twenty percent of the total federal budget and benefits are provided to over 40 million Americans.

Unfortunately, the public's perception of the strength of the Social Security system is waning. According to one survey, more than four out of ten Americans doubt that Social Security will exist to pay them in *their* retirement what retirees get today. Two out of ten Americans are unsure about the Program's future.

It has been predicted that the "real" social security crisis will strike around 2012, when the 76 million so-called "baby boomers" begin to retire. Since the major consequences are relatively distant, it would be easy—but foolhardy—to forego addressing potential problems with the Social Security system now.

The authors of the "Money's Worth" study have made some interesting findings about the amounts workers pays into Social Security and the amounts they receive in benefits. I look forward to hearing from the Acting Administrator and the witnesses regarding the usefulness of the "Money's Worth" analysis, and its implications for developing policies that will ensure the strength of the Social Security Program.

Thank you Mr. Chairman.

PREPARED STATEMENT OF LOUIS D. ENOFF

Mr. Chairman and Members of the Committee:

I am pleased to be here today to discuss the value of Social Security and the question of whether today's workers will get a fair return on their contributions in terms of the benefits they will receive from Social Security. In your letter of invitation you have asked for my views on the recent paper by Robert J. Myers and Bruce D. Schobel entitled "An Updated Money's Worth Analysis of Social Security," and on the technical question of whether the employer's share of taxes should be considered when evaluating money's worth. You also asked me broader questions about the usefulness of this analysis, and its implications for Social Security policy. I would like to discuss these broader issues first, then present our own analysis, and finally compare it with that prepared by Myers and Schobel.

In order to evaluate the value of the Social Security program overall, and the question of fairness to today's workers, it is helpful to look at the basic goal of Social Security, as well as benefits paid to individuals. Let me begin, then, with a brief look at the history and purpose of the program.

Goal of Social Security

As you know, Mr. Chairman, the Social Security program was born out of the Great Depression of the 1930's. The fundamental program goal was to provide a basic floor of financial protection which, when supplemented by other income sources such as pensions, savings, and investments, would prevent a recurrence of the widespread economic insecurity and poverty of that time, particularly among the elderly.

To accomplish this, Social Security was designed as a nationwide system of social insurance under which workers, their employers, and the self-employed pay Social Security taxes--taxes which help insure workers, their survivors, and their dependents against the loss of earnings due to the worker's retirement, death, or disability.

Clearly, Social Security has met this fundamental program goal. There is no single program--public or private--that has protected the financial well-being of as many Americans as Social Security. For more than 50 years, Social Security has been a source of financial security and stability for millions of Americans.

Last year, for example, we paid $286 billion in benefits to more than 40 million beneficiaries. Today, nearly one out of six people receive monthly benefits. And about 36 percent of beneficiaries over age 65 are kept from living in poverty by their monthly Social Security benefits. In addition, the cost of administering the program is less than one percent of taxes paid. In other words, more than 99 percent of Social Security taxes paid by workers goes back out in benefits paid.

The Value of Social Security

There are a number of ways to measure the value of the Social Security program. One way is to consider Social Security in terms of individual equity--the amount a worker receives in

benefits, compared to the amount of contributions that worker paid. Another way is to determine how well Social Security is meeting the goal of social adequacy--that is, the need to provide some level of basic financial protection to workers and their families. And yet another way to determine the value of Social Security is to evaluate its effectiveness as a social insurance program, combining elements of both individual equity and social adequacy.

Let me take a few moments to discuss each of these ideas.

Individual Equity

Although the Social Security program was never intended or designed to provide benefits strictly commensurate with an individual's taxes, many people are interested in whether they "get their money's worth" from the program. Often, individuals who try to assess the value of their Social Security coverage tend to do so by comparing the taxes they pay to the amount of retirement benefits they can expect to receive.

This tendency is understandable, since contributions paid are an earmarked tax for a dedicated trust fund. Also, one of the basic concepts underlying the Social Security program is that a worker's Social Security taxes establish a right to benefits that is not dependent on showing individual financial need. Instead, Social Security benefits are related to the worker's average lifetime earnings which are subject to Social Security tax. Generally, the higher the earnings, the higher the monthly benefit. Thus, Social Security has an element of individual equity underlying its design.

These "individual equity" aspects of the program are a key reason for the widespread public support that the Social Security program has enjoyed since its inception. In keeping with the interest in this particular measure of "value," I will be giving specific examples of how taxes paid compare to benefits received for various groups of workers later in my testimony.

Social Adequacy

Let me stress, however, that, because Social Security is designed to meet certain "social adequacy" goals, one cannot measure its worth simply by comparing taxes paid against benefits received. To understand and evaluate Social Security, one must remember that certain features of the program are geared toward meeting broad-based social needs rather than toward individual equity.

For example, the basic benefit formula is designed to replace a higher proportion of earnings for low earners than for high earners. Generally, the formula recognizes that lower earners need to have more of their earnings replaced because they spend a higher proportion of their earnings for basic needs. Also, such workers generally are not able to accumulate savings or generate investment income to the extent that higher earners can. Finally, many of them have worked in jobs that have not provided pension coverage.

As another part of the social adequacy aspect of Social Security, dependents' and survivors' benefits are paid to workers with families, even though workers pay no additional taxes for this coverage. This protection can be extremely important, especially for young families that have not been able to sufficiently insure themselves against the risk of the worker's death or disability.

Social Insurance Aspects of the Program

I think we all recognize, however, that Social Security is not just an annuity program that simply provides a specific rate of return on contributions. Nor is it a social welfare program, focused on measuring individual needs and providing resources to meet them. Instead, the Social Security program strikes a balance between the goals of individual equity and social adequacy.

Social Security operates as a social insurance program, spreading the cost of protection against the risk of lost income due to retirement, death, or disability over the entire working population. As I have already noted, the program has elements of both individual equity and social adequacy. As a result, some people can expect to get back more than they put into Social Security, some to break even, and some to get less.

The value of benefits for any given worker depends on his or her individual circumstances--whether the individual has high or low earnings, is married or has children, becomes disabled or dies at a young age, or receives benefits far into old age. However, the value of the program must be measured not only on the basis of the dollar value of benefits received, but also in terms of the protection it provides for the individual, the worker's family, and for our society as a whole.

Those who limit their analysis of the value of Social Security to the retirement program ignore the vitally important disability and survivor programs. Few people realize that over 30 percent of all Social Security benefits were paid to disabled workers and their families, and to survivors of deceased workers.

Last year, we paid about $30 billion in benefits to about 4.6 million disabled workers and family members, and about $57 billion in benefits to 7.3 million survivors of deceased workers. Social Security pays more benefits to children than any other Federal program. The value of Social Security disability and survivor protection is clear when we consider the fact that 42 percent of male workers, and 28 percent of female workers, will become disabled or die before they reach retirement age.

Benefit and Tax Comparisons

Mr. Chairman, let me now discuss some specific comparisons of taxes to benefits. Although, as stated earlier, the value of the Social Security program should not be measured solely on the basis of individual equity, workers are nevertheless interested in whether they get back as much in benefits as they pay in taxes. Any analysis of the Social Security program shows that past generations have benefited extremely well from the program.

The case of Miss Ida Fuller, the program's first beneficiary, illustrates this point. Miss Fuller paid only about $22 in Social Security taxes, but received more than $20,000 in retirement benefits--more than 900 times the amount of employee taxes paid. And while most early participants did not receive returns of this magnitude, they have still done very well.

When comparisons are made of the value of an individual's Social Security benefits and taxes, there is the question of whether only the employee taxes or the combined employer-employee taxes should be considered. Some think that the employer tax should be reflected in the comparison, because they believe that it is borne entirely by the employees through lower wages than would otherwise be paid. Others would say that the employer tax should

not be considered. They believe that employers absorb the tax, pass it along to consumers in the form of higher prices, or a combination of the two. The employer tax can also be viewed as providing for the cost of the "social adequacy" elements of the program. In other words, the employer tax could be said to be used for the benefit of lower-paid workers and dependents.

Comparisons of benefits and taxes are based on calculations of the present value of benefits and taxes, taking account of interest and mortality. Some analyses of the money's worth of Social Security benefits include both the employee and the employer taxes. Others include only the employee taxes for the reasons we have discussed. In our computations, we have used only the employee taxes. Taxes paid by the employer can be taken into account by halving the ratios of the present value of benefits to the present value of Old-Age, Survivors, and Disability Insurance (OASDI) taxes.

In comparing a worker's Social Security benefits and taxes, we have looked at several hypothetical cases of workers with steady earnings in each year. Using certain assumptions on interest rates, mortality rates, and disability rates, we compute the present value of the worker's Social Security benefits and Social Security taxes.

The table attached to this statement shows the results of our computations for workers born in selected years from 1920 through the year 2000. This table includes assumed interest. Our calculations take account of the probability of death before, as well as after, age 65, and the incidence of disability before age 65, since the value of disability and survivors' protection is included in our calculation of the worker's Social Security benefits. Retirement is assumed to occur at the "normal retirement age"--the age at which full-rate retirement benefits first become payable. For workers born before 1938, the normal retirement age is 65. For workers born later, the normal retirement age is scheduled to increase gradually until it reaches age 67 for workers born in 1960 or later.

Turning now to a specific example, the table shows that, for workers with average earnings who would reach age 65 in 1993, the value of benefits is more than twice the value of taxes for male workers, and more than two-and-a-half times for females. The table also shows that workers with low earnings have higher benefit-to-tax ratios than the average earner, while workers with maximum taxable earnings have lower ratios. This is due to the weighted benefit formula used for the computation of OASDI benefits and reflects the principle of social adequacy described previously. The table also illustrates that single females have significantly higher ratios of benefits to taxes than single males with the same earnings, due to the longer life expectancy of women.

In addition, for a hypothetical family--consisting of a working husband, a wife of the same age who does not work outside the home, and two children--the ratios of benefits to taxes are significantly higher than for single workers. For example, for a couple in which the worker had average earnings and reaches age 65 in 1993, the value of the benefits is almost four and one-half times the value of the worker's taxes.

Moreover, as a result of the lower payroll-tax contribution rates in effect in the early years of the program and the scheduled increase in the normal retirement age, ratios of benefits to contributions shown in the table for workers born before 1928 are substantially higher than ratios for workers born after that

year. For example, average earners born in 1920 who could retire at age 65 in 1985 had benefits equal to three times the taxes paid, as compared to the average earner reaching retirement age this year who has benefits equal to twice the taxes. The value of benefits is about one and a half times the value of taxes for similar workers born in 1960 who will reach normal retirement age in 2027.

Myers and Schobel Analysis

As you requested in your letter of invitation, we have examined the recent paper by Robert J. Myers and Bruce D. Schobel entitled "An Updated Money's Worth Analysis of Social Security," to be published in the forthcoming edition of Transactions of the Society of Actuaries. Their evaluation of Social Security focuses on retirement benefits for hypothetical single workers who survive past retirement age. Our analysis includes the value of disability and survivors' protection as well as the value of retirement benefits. We also have analyzed the value of the program for a hypothetical family as well as for single workers. And, in addition to workers with average and maximum earnings, addressed by Myers and Schobel, we have included workers with low earnings.

Because the Myers and Schobel analysis is based on single workers who reach retirement age, it is most readily compared to our values presented here for single workers. When adjustments are made to account for differences in interest rate assumptions and birth years, several values from the Myers and Schobel analysis can be compared with our results. For example, for a single male average wage earner born in 1940, we estimate the ratio of Social Security benefits to taxes to be 167% and Myers and Schobel estimate 157%. Other comparisons for single workers show even smaller differences and thus, our results for single workers are not markedly different from those presented by Myers and Schobel.

Conclusion

In conclusion, Mr. Chairman, those who seek to measure the value of Social Security must consider many elements of the program--elements which affect the whole fabric of American society, as well as individual workers and beneficiaries. That is because Social Security is based upon the concepts of individual equity, social adequacy, and social insurance. Thus, it was conceived not only to pay benefits to individuals, but also to protect America from the kind of widespread economic uncertainty and need that existed during the Great Depression.

For more than 50 years Social Security has been one of the most important and successful government programs. Certainly, some people get back more than they put into Social Security. Others break even, and some get less than they contributed. That is the nature of a social insurance program like Social Security. But the program's value cannot be measured solely on the basis of the dollar value of benefits a particular person receives. Rather, the value of Social Security must be seen in terms of the protection it provides--both for the individual and for our society as a whole. If we fail to remember the essential social insurance principles of Social Security, we risk losing the key to the program's success.

Present Value of OASDI Benefits as a Percent of Present Value of Employee Contributions for Single Males, Single Females, and Married Males Entering the Workforce at Age 22 With Steady Earnings Until Death, Disability, or Retirement at the Normal Retirement Age (NRA), Based on Alternative II Assumptions of the 1992 Trustees Report

Year of birth	Year of attainment of NRA	Low earnings	Average earnings	Maximum earnings
		Single male		
1920	1985	448%	301%	257%
1928	1993	292	214	171
1945	2011	205	153	113
1960	2027	204	152	101
1970	2037	224	167	110
1980	2047	231	172	113
2000	2067	241	179	118
		Single female		
1920	1985	543	364	308
1928	1993	346	255	202
1945	2011	235	175	130
1960	2027	236	175	117
1970	2037	258	192	127
1980	2047	265	198	130
2000	2067	274	204	135
		Married couple		
1920	1985	1,029	702	598
1928	1993	603	448	356
1945	2011	413	310	229
1960	2027	406	304	202
1970	2037	441	330	217
1980	2047	448	335	221
2000	2067	460	344	226

Social Security Administration
Office of the Actuary
March 4, 1993

PREPARED STATEMENT OF LAWRENCE J. KOTLIKOFF

Senator Moynihan and other distinguished members of the Senate Committee on Finance, I am honored by this opportunity to discuss with you the U.S. Social Security System's treatment of different generations. Our social security system, in conjunction with a number of other government programs and policies, has played a major role in redistributing resources from today's young and future generations toward generations that reached retirement in the past four decades. Actuarial calculations that former Chairman of the President's Council of Economic Advisers, Michael J. Boskin, Douglas Puffert, John B. Shoven of Stanford University, and I have made and which appear in a National Tax Journal article, which I submit for the record, show that the baby boom generation and generations coming behind them will all pay much more in social security taxes over their lifetimes than they will get back in benefits. Moreover, the deal for each successive generation is worse. The loss to the typical baby boomer ranges from one to two years of labor earnings. For children just being born the projected loss ranges from two to three years of labor

earnings. In contrast, generations now retiring are roughly breaking even under the system. The real beneficiaries of social security's intergenerational redistribution are generations who retired in the 1950s, 1960s, and 1970s. For these generations social security's net transfer ranged from about one to two years of labor earnings.

In addition to this enormous redistribution across generations, our social security system also redistributes huge sums within generations. Part of this intragenerational redistribution seems appropriate; it involves giving poorer households a better deal than richer households. But there is also a tremendous amount of redistribution from single individuals and couples in which the spouses have roughly equal earnings to single-earner couples and couples in which one spouse is the predominant earner. This redistribution is a reflection of the way the system provides survivor and dependent benefits. Setting aside the question of how, if at all, one can deal with Social Security's intergenerational redistribution, there is absolutely no reason to let the system continue to redistribute huge sums among members of each new generation that comes along.

What is needed to reform appropriately Social Security's intragenerational redistribution is the adoption of full earnings-sharing among couples. Earnings sharing, incidentally, will provide secondary earners, primarily wives, with much greater work incentives than currently exist. I submit for the record a proposal for social security reform that includes full earnings-sharing. The proposal, which I developed together with Michael J. Boskin and John B. Shoven, is entitled Personal Security Accounts. It calls for reforming social security for the baby boom generation and all subsequent generations. Personal Security Accounts preserve what I, and I think, most economists believe are the positive elements of social security, namely the provision, on a progressive basis, of annuity, disability, and survivor insurance as well as retirement income, while eliminating the system's capricious intragenerational redistribution and high marginal taxation of the labor supply of women.

Returning to the issue of social security's intergenerational redistribution, I think it is important to put social security in context. Were "pay-as-you-go" social security the only government policy that redistributes across generations, we could consider intergenerational redistribution simply by examining social security. But there are a range of other government policies that, unfortunately, have played a similarly large role in redistributing across generations. The accumulation, in recent years, of a huge amount of official government debt is the most transparent example of such policies. A second example is the enormous growth in transfers from young to old through "pay-as-you-go" Medicare and Medicaid. A third example is the significant postwar shift in the tax structure away from sales, excise, and capital income taxes, that fall disproportionately on the elderly, toward taxes on labor income, that fall disproportionately on the young and middle-aged.

There are, of course, some offsetting policies, such as the expansion of the earned income tax credit, that primarily benefit the young and middle-age. One must also factor-in the fact that those generations that have received, on average, much more in social security benefits than they contributed in social security taxes, paid significant amounts of income and other taxes over their lives. One could certainly argue that their social security benefits were a partial return on the payment of these non social security taxes.

Thus, once one steps back from a narrow focus on social security alone, one realizes that understanding the government's full treatment of different generations requires a comprehensive generational accounting. In recent years, I, together with Alan J. Auerbach of the University of Pennsylvania and Jagadeesh Gokhale of the Federal Reserve Bank of Cleveland, have developed such a method of analysis.

Generational accounting considers the operations of all governments (federal, state, and local), and it incorporates the long-term tax, spending, and demographic forecasts of the Social Security Administration, the Health Care Financing Administration, and the Office of Management and Budget. The new accounting has found a welcome audience. It's now being done by the Japanese, Italian, and Norwegian governments. Generational accounts for the U.S. have been presented in the past two Budgets of the U.S. Government. These presentations were prepared by myself and my colleagues, together with OMB staff.

I wish to submit for the record the generational accounts presentation from the Budget document President Bush submitted in January. let me refer you to the seventh column of Table 5 which shows the lifetime net tax rates of different generations who were born in this century and will be born in the future. The term lifetime net tax rate refers to the present value of all taxes a generation pays, less all transfer payments it receives, divided by the present value of all labor income that it earns. The figures presented are based on actual taxes paid and transfers received in the past as well as projections of taxes and transfers to be paid in the future given current policy.

As the table shows, the lifetime net tax rate for generations born in 1900 is 21.5. It is 28.1 for the generation born in 1930, 32.1 percent for the generation born in 1960, and 33.5 percent for the generation born in 1991. The table also shows the lifetime tax rate of future generations. This tax rate is computed by forming the ratio of the fiscal burden, measured as a present value, to be foisted on future generations given baseline policy divided by the present value of the projected labor income of these generations. As indicated in the table, the net tax rate to be imposed on future generations is a staggering 71.1 percent!

How does generational accounting determine the fiscal burden facing future generations? It does so by calculating, as a present value, how much generations now alive will pay in net taxes over the rest of their lives. It also calculates the present value of the government's bills—the sum of its official debt plus the present value of its current and future spending on goods and services. Subtracting the size of the government's bills from the present value net tax contribution of current generations, gives, in present value, the net tax liability of future generations. The logic is simple: the less current generations pay for the government's bills, the more future generations will have to pay.

Why is the projected net tax rate on future generations so high? The answer primarily involves things that are not affecting the size of the official federal debt. They include our out-of-control spending on Medicare and Medicaid and the interaction of these programs, as well as social security, with an aging society. The tax rate is also high because it is calculated under the assumption that even our children will bear no higher net taxes than current Policy implies. The alternative scenario, leaving the burden to our children as well as our grandchildren, is hardly a solution.

To summarize, the lifetime net tax rates of different generations presented in this table show two things: First, since the generation born in 1900, successive generations have had to pay, on net, larger and larger fractions of their lifetime incomes to government. The net taxes of successive generations have been rising, in part, to finance rising levels of government purchases of goods and services, but they've also been rising as part of a systematic process of intergenerational redistribution.

The second thing the table shows is that we are on a trajectory to tax future generations at much much higher rates than we are taxing current generations. However one views the intergeneration redistribution of the past, we should realize that the process of making successive generations pay larger and larger fractions of their incomes to the government must be stopped. To do so we must adopt policies that raise the net taxes of current generations, thereby permitting lower net taxes for future generations.

Will President Clinton's program help those coming in the future? Indeed, it will. The fiscal plan just announced will lower the net tax rate on future generations from 71 percent to 59 percent. While this reduction may seem inadequate, an effective health care reform plan could produce an even larger net tax rate reduction. The President's program will also help today's children. If nothing is done now, today's children could well end up facing lifetime net tax rates of 50 to 60 percent in order to limit tax increases on future generations. Under the President's fiscal and health care plans today's children may get away with facing lifetime net tax rates of 35 to 40 percent. While tax rates of 35 to 40 percent are far too high, they are the inevitable and, now unavoidable, consequence of the off-the-books game of "pass the generational buck" that we've been playing for a long long time. The would-be heroes in the President's program are we adults. Our financial sacrifice will provide the means to keep tax rates on our children and grandchildren from soaring.

Let me conclude by pointing out that in permitting generations born further in the past to pay less and making subsequent generations pay more, the government has permitted those around in the past to consume more than would otherwise have been the case. Postwar intergenerational redistribution is, in my view, the single most important explanation for the low rates of U.S. saving that have plagued our economy for almost two decades. Our low rate of saving has meant a low rate of investment, which, in turn, has meant slower growth in capital per worker and, as a result, slower growth in labor productivity. Since real wages reflect labor productivity, there is a direct connection between U.S. intergenerational policy and the level and growth of U.S. real wages. Hence, U.S. intergenerational policy is not only directly expropriating our children by hitting them with, at best, very high lifetime net tax rates, it is also indirectly expropriating them by reducing the level and growth of their real wages they would otherwise have enjoyed.

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Social Security: A Financial Appraisal Across and Within Generations

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SOCIAL SECURITY: A FINANCIAL APPRAISAL ACROSS AND WITHIN GENERATIONS****

MICHAEL J. BOSKIN,* LAURENCE J. KOTLIKOFF,** DOUGLAS J. PUFFERT,*** AND JOHN B. SHOVEN*

ABSTRACT

This paper computes the expected present value of Social Security retirement benefits and taxes for households of different marital circumstances, incomes, and age cohorts. Also computed are the net gain or loss from participation in the system, the expected internal rate of return it offers various participants, and the marginal linkage between benefits and contributions. All computations are made for the 1985 Social Security and income tax laws. The general results are that Social Security offers vastly different terms to households in different circumstances. The net gain or loss varies by $200,000 and the real internal rate of return on contributions ranges from negative numbers to 6.3 percent for households of different ages, income levels, and marital status. These differences are far greater than the widely debated distributional effects of relevant income tax alternatives. We also find that there is a great deal of variance in the marginal linkage of benefits and taxes with most households facing a situation where the incremental present value of benefits is only zero to thirty cents per extra dollar of taxes paid.

1. Introduction

FOR most Americans, anticipated Social Security retirement benefits have a value larger than the total value of their other financial assets.[1] Likewise, more than half of the workers in the United States pay more in OASDHI "contributions" than they pay in personal income taxes. Because the program looms so large in the financial picture of so many, it is reasonable to assume that there is a significant demand for an investment evaluation of the deal it offers Americans. However, the program is extremely complex, with the expected benefits depending on one's marital status, sex, age-earnings profile, length of career, number of children, and other factors.

In this paper we simplify the analysis by exclusively evaluating the retirement portion of the program. We also only examine it from the perspective of the household or the individual and our study is partial equilibrium in the sense that we do not tackle the consequences of the program for labor force participation or private saving behavior. Further, the household or individual is not particularly concerned about whether the program is fully funded or on a pay-as-you-go basis. What the participant is interested in is how large are his or her taxes (or "contributions" or "investments") and what is the expected value of benefits to which he or she will be entitled. The economically sophisticated household will also be interested in the marginal linkage between taxes and benefits. That is, they would like to know the incremental value of the retirement benefits for an incremental payment of Social Security taxes. We calculate this marginal linkage as well as the expected present value of taxes and benefits for households of different income levels, marital status, and belonging to different age cohorts. In computing the present value, we use a three percent real discount rate, although some sensitivity analysis to that figure is presented in the Appendix to the paper. We also calculate the present value of transfers offered by Social Security as the difference between the present value of benefits and taxes. The transfer figure is the surplus or gain one receives from participating in the system (if the figure is positive). Finally we compute the internal rate of return offered by the retirement portion of Social

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irity. That is, we calculate the rate of ount which equates the expected pres- value of benefits with the expected ent value of taxes. Throughout the lysis, we assume the participant bears burden or effectively pays both the loyer and the employee contributions ie system.

ie emphasis of the paper is to calcu- the financial terms of Social Security iouseholds in different circumstances. results indicate that the "deal" var- normously by marital status, income, cohort. The difference in the transfer res for different households examined approach 200,000 1985 dollars. The rnal rate of return ranges from over percent to negative numbers. And, the age between incremental taxes and efits can be significant or zero, de- ding on the particular household's cir- istances. While some of these differ- es are undoubtedly intentional, others probably not. It is our feeling that both ticipants and analysts of Social Secu- need this information in order to luate the current structure of the pro- m.

he remainder of the paper is laid out ollows: the next section contains a brief vey of related literature. Then, section e describes our methodology and data. intergenerational results are con- ied in section four, while the intragen- tional results are presented in section . Section six looks at the marginal kage of taxes and benefits. Section en considers the relationship of bene- to remaining lifetime taxes. The pa- concludes with some observations on importance of our findings.

Literature Review

Several studies have attempted to es- iate the "deal" various households have eived or can expect to receive from So- l Security's retirement program.[2] One iclusion of this literature is that the rly cohorts of retirees had very large es of return on their taxes and that fu- re retirees, especially well off ones, are ely to fare poorly, with a rate of return low that available on private assets. Hurd and Shoven (1985) document this pattern of rates of return for various cohorts and earnings levels, but their analysis was made prior to the 1983 amendments and hence does not include consideration of the increased age of eligibility for future retirees or the partial taxation of benefits. Also, there have been some changes in the economic and demographic assumptions used by the Social Security Administration.

Boskin, Avrin, and Cone (1983) report the average transfer per household for succeeding ten-year age cohorts, with transfers defined as the difference in the expected present value of benefits and taxes. They also present estimates of how different cohorts and the system finances as a whole would be affected by various policy changes, such as increases in the retirement age. They conclude that those retiring recently are receiving benefits which are about three times as large as the sum of their employee and employer contributions plus three percent real interest. Thus, about two-thirds of their benefits are transfers as defined above.

These results are updated to the present, post-1983-amendments case in Boskin (1986). The pattern of transfers remains qualitatively similar to that mentioned above, but attention is called to the fact that OASDI is unlikely to be financially solvent over the next 75 years, despite the 1983 amendments. The financial solvency problem is much worse if HI, hospital insurance, is included.[3] Moreover, *how* and *when* the financial solvency issue is addressed will matter for the Social Security benefits, taxes and transfers of individuals of various ages. For example, whether changes are made in the tax rates, benefit formulas, the age of eligibility for full retirement benefits, or else the method of financing Social Security will impact various cohorts quite differently.

Variation among households within a cohort is shown in the studies of Bennett (1979), the Congressional Budget Office (1986), and Pellechio and Goodfellow (1983). The latter study examines the net impact of the 1983 amendments on various types of households and is similar in

spirit to the analysis presented here.

We go beyond these previous studies in considering a wider range of cases, updating to the Social Security Administration's 1985 assumptions, and in using a simulation which more precisely models survival probabilities and income taxation of benefits.

Studies by Gordon (1983), Burkhauser and Turner (1985) and Browning (1985) examine the marginal linkage between taxes paid and benefits received. We differ from these studies in considering specific wage histories, a distribution of possible ages of death, the upcoming increase in retirement age, and income taxation of benefits.

A further innovation in our work is a computation of the relationship between one's *future* taxes (treating past taxes as "sunk") and benefits. The significance of such a calculation received ample treatment in the analytical study of Browning (1975).

3. Methodology and Data

In the present study, we use a computer simulation to convert assumptions about households' wages, expected mortality, and economy-wide growth in real wages into expected values of Social Security taxes, benefits, net transfers (positive or negative) and internal rates of return. Assumed wage histories lead in a straightforward manner (following legal provisions) to derivation of taxes paid during working lives and benefits received after retirement.[4] A separate procedure, described below, determines income-taxation of benefits. These taxes and net-of-income-tax benefits are weighted by the probabilities of household members remaining alive at each age and discounted (we consider real rates of 0 percent, 2 percent, 3 percent, and 4 percent) to a common year. We also derive the transfer, or difference between discounted expected taxes and benefits, and the internal real rate of return, the rate at which discounted expected taxes equal discounted benefits.

We consider typical households which differ in a number of respects: in marital status, the amount of total household earnings, and the division of total earnings between wife and husband. We also compare households born in 1915, 1930, 1945, 1960, 1975, and 1990, since these cohorts differ in the tax rates they pay, the economy's level of real wages, and life expectancy.[5]

We assume that individuals work, and pay Social Security taxes, from age 21 until they become eligible for full retirement benefits—at age 65 for those born in 1915 and 1930, 66 for those born in 1945, and 67 for later cohorts. We do not consider unemployment.

Wages vary for individuals both with economy-wide wage growth (as indexed by the Social Security Administration's "Average Wage Series") and according to their age: we assume that male wages increase one percent per year of age beyond the economy-wide growth in wages until age 50 and that female wages increase one-half percent per year of age until age 50, and then flatten until retirement. The "earnings levels" reported in the tables below correspond to the 1960 cohort—25-year-olds in 1985. By 2010, when the 1960 cohort is 50 years old, its real wages will have increased 45 percent with economy-wide wage growth plus an additional 28.4 percent for males and 13.3 percent for females in keeping with their age-profile of wages. The 1930 and 1945 cohorts have wages in 1985 which vary by the age-profile from the "earnings level" listed. All cohorts other than the 1960 cohort have age-25 wages which differ from that reported as the "earnings level" by the difference in the wage index between 1985 and the year they are 25. In our principal research we follow the Social Security Administration's intermediate assumption (Assumption II-B), 1.5 percent growth per annum, for future wage growth; however, we do consider other assumptions as well below.

The figures we present are *ex ante* (or expected value) calculations for each cohort as of age 25. Taxes and benefits for higher ages are weighted by the probabilities of individuals remaining alive at each age. Since wives may collect spouse or survivor benefits based on their hus-

nds' earnings histories, we derive their
ıefits as the weighted average of ben-
ts for each age of husband death, in-
ding death before retirement.
lusbands and wives are assumed to be
n in the same year. Marriages are as-
ned to take place at age 25, widows are
umed to remain single, and divorce is
considered.
Aortality probabilities are considered
ıarately for males and females. Sepa-
e mortality tables are used for each co-
t. The tables used are those used for
intermediate assumption (Assump-
n II) in the 1983 Annual Report of the
ard of Trustees of the Old Age and
rvivors' Insurance and Disability In-
rance Trust Funds.[6] The male and fe-
ıle life expectancies implicit in these
ıles, conditional on survival to age 25,
e 70.4 and 78.2 years for those born in
15, 72.0 and 79.6 for 1930, 74.0 and 81.8
1945, 74.6 and 82.1 for 1960, 75.3 and
9 for 1975, and 76.0 and 83.6 for 1990.
The recent legislation of taxation of So-
l Security benefits has added substan-
l complication to our derivations. The
v provides for the taxation as ordinary
ome of half one's benefits to the extent
ıt this portion of one's benefits, plus
ıer adjusted gross income, exceeds the
-indexed threshold levels of $25,000 for
ıgles and $32,000 for couples. The chief
ficulty arises in deriving adjusted gross
come and marginal tax rates for retired
useholds for which we otherwise make
sumptions only about wage income in
e-retirement years. Our procedure is as
lows: Census Bureau data are used to
termine the percentile rankings of the
usehold earnings levels we consider.[7]
S data are used to determine the ad-
sted gross income and taxable earnings
taxpayers over age 65 which corre-
ond to these same percentile rankings.[8]
ıese figures for adjusted gross income
d taxable earnings are assumed to vary
th our wage index from the year of the
ta to the year five years after a cohort's
tirement, but to vary for each given co-
rt only with the Consumer Price Index.
ıe figures for adjusted gross income de-
rmine the amount of benefits subject to
xation, while the figures for taxable
earnings determine the marginal tax rate
which is applied. Since tax brackets are
indexed by the CPI a common marginal
tax rate is thus derived for all years of
one's retirement. We have not added the
complication of considering that part of
benefits will generally fall within higher
brackets.

4. Intergenerational Transfers in Social Security

Social Security—when it was introduced and each time it has expanded—has been a major vehicle for transferring resources from the younger, richer, working generation to the older, poorer, retired generation. While part of this public redistribution of wealth between generations may be offset by private intrafamily intergenerational transfers, it is unlikely that this offset is sufficient to alter our general conclusions.[9] While the percentage of transfers in benefits is largest for the first cohort of retirees (who receive virtually a complete windfall), the positive intergenerational transfers received by retirees may continue to be substantial for decades, turning negative for subsequent retirees.

Tables 1A and 1B highlight the expected intergenerational transfers under current law and the Social Security Administration's intermediate (II-B) economic and demographic projections.[10] Table 1A compares the expected present value of benefits, taxes, and transfers (the difference between benefits and taxes) across six cohorts of current and future retirees at various earnings levels. It also presents the internal rate of return on the taxes paid, i.e. the rate which equates the expected present values of taxes and benefits. The dollar figures are discounted at a real 3 percent rate; sensitivity analyses to variations in the discount rate are discussed in the appendix.

The three earnings levels presented ($10,000, $30,000, and $50,000) are wage indexed levels for 1985, and represent, roughly, the poverty line, median income, and well-paid professionals, respectively. For the 1960 cohort, they represent actual 1985 wages at age 25. For the 1945

Table 1A
Comparison Across Cohorts of
Single-earner Couples, Various Earnings Levels
(1985 dollars discounted at rate 3% to 1985)

		Earnings Level (at 1985 wage index)		
Year of Birth		10,000	30,000	50,000
1915	P.V. Benefits	84,356	129,703	118,160
	P.V. Taxes	35,649	67,189	71,053
	P.V. Transfer	48,707	62,514	47,107
	Rate of Return	6.34%	5.46%	4.83%
1930	P.V. Benefits	72,943	117,089	107,963
	P.V. Taxes	48,029	110,155	110,428
	P.V. Transfer	24,914	6,934	-2,464
	Rate of Return	4.37%	3.22%	2.92%
1945	P.V. Benefits	57,932	101,554	93,783
	P.V. Taxes	48,951	136,498	140,253
	P.V. Transfer	8,981	-34,944	-46,470
	Rate Of Return	3.50%	2.07%	1.74%
1960	P.V. Benefits	42,356	75,845	69,801
	P.V. Taxes	41,263	123,788	138,302
	P.V. Transfer	1,093	-47,943	-68,501
	Rate of Return	3.08%	1.54%	1.02%
1975	P.V. Benefits	33,522	60,886	56,315
	P.V. Taxes	33,273	99,819	112,081
	P.V. Transfer	249	-38,933	-55,766
	Rate Of Return	3.02%	1.54%	1.03%
1990	P.V. Benefits	27,291	48,873	45,467
	P.V. Taxes	26,399	79,196	88,866
	P.V. Transfer	892	-30,323	-43,399
	Rate of Return	3.10%	1.58%	1.09%

Table 1B
Comparison Across Cohorts of
Single-earner Couples, Various Earnings Levels
(1985 dollars discounted at rate 3%
to the year in which cohort is age 25.)

		Earnings Level (at 1985 wage index)		
.r of Birth ar Age 25)		10,000	30,000	50,000
.5	P.V. Benefits	22,307	34,299	31,246
)40)	P.V. Taxes	9,427	17,768	18,789
	P.V. Transfer	12,880	16,531	12,457
	Rate of Return	6.34%	5.46%	4.83%
30	P.V. Benefits	30,052	48,239	44,480
)55)	P.V. Taxes	19,787	45,383	45,495
	P.V. Transfer	10,265	2,856	-1,015
	Rate of Return	4.37%	3.22%	2.92%
45	P.V. Benefits	37,184	65,184	60,196
970)	P.V. Taxes	31,420	87,613	90,023
	P.V. Transfer	5,764	-22,429	-29,827
	Rate of Return	3.50%	2.07%	1.74%
60	P.V. Benefits	42,356	75,845	69,801
985)	P.V. Taxes	41,263	123,788	138,302
	P.V. Transfer	1,093	-47,943	-68,501
	Rate of Return	3.08%	1.54%	1.02%
75	P.V. Benefits	52,226	94,859	87,737
000)	P.V. Taxes	51,839	155,515	174,618
	P.V. Transfer	387	-60,656	-86,881
	Rate of Return	3.02%	1.54%	1.03%
'90	P.V. Benefits	66,241	118,628	110,360
015)	P.V. Taxes	64,077	192,229	215,700
	P.V. Transfer	2,164	-73,601	-105,340
	Rate of Return	3.10%	1.58%	1.09%

cohort, actual earnings levels at the age of 40 for low-wage males in 1985 would be $11,610, which exceeds the $10,000 figure by 15 years of movement along their age earnings profile. For the 1915 cohort, which is 70 in 1985, these figures must be deflated by the real wage index to ascertain their actual wages earlier in their lives; similarly, for cohorts not yet working, these figures would be compounded at real wage growth projections (1.5 percent/annum in the II-B scenario) to ascertain the actual future real wages at age 25, and at real wage growth plus the movement along the age-earnings profile from age 25 to 50. Thus, as one moves down a column across cohorts, we are, roughly speaking, maintaining the relative position in the income distribution.

Table 1A reveals, reading down each column (within earnings classes, across age cohorts), that the internal rate of return declines rapidly for the first four cohorts; for example, from 6.3 percent to 3.0 percent for the $10,000 earnings level and from 4.8 percent to 1.0 percent for the $50,000 earnings level. The youngest two cohorts are presently expected to receive rates of return about equal to the 1960 cohort. This occurs because their increasing life expectancy offsets increased taxation of benefits. However, the returns of 9 percent[11] or so received by the 1905–1910 cohort (who paid taxes for five to ten fewer years than the 1915 cohort) are no longer evident, despite successive expansions of the system. The start-up effect is roughly over by the 1945 cohort.

Next, notice that future poor families will receive only very small transfers—amounting to a present value of no more than about $1,000 from 1960 onwards. Despite the progressive nature of the benefit formula, current Social Security law does little for working families earning about poverty line incomes in the future. Of course, the *very* poor do "better," as a larger share of their average indexed monthly earnings will be on the 90 percent replacement rate segment of the primary insurance amount formula (rather than the 32 percent segment).

The present value of transfers turns negative as early as the 1945 cohort for the earnings levels above $10,000. Correspondingly, the internal rates of return drop below 3 percent. For the $50,000 earnings level, the (negative) transfer peaks at over $68,000 for the 1960 cohort (the real wage growth of 1-1/2 percent does not offset the higher discount rate, so later cohorts appear to do better, discounted to 1985).

Looking across columns within each age cohort reveals some interesting results. First, while for the 1915 cohort, the rates of return are highest for the poorest families, the absolute dollars of transfers are higher for the middle-income family. The reason is that the level of participation in Social Security is related to earnings. Higher wage workers in this cohort were allowed to play in a favorable game for higher stakes. The deal for the rich, absolutely and relatively, worsens dramatically relative to the other earnings levels in succeeding cohorts.

Table 1B presents numbers analogous to those in Table 1A, but discounted to the year each cohort reaches age 25—roughly speaking when they "enter" the system. Thus, the table shows the increasing scale of participation in the Social Security system for succeeding cohorts, as real wages and tax rates both rise.

In summary, the intergenerational transfers in Social Security have been, and continue to be, substantial. The size of such transfers varies substantially by cohort and earnings level. In the next section, we will see that it also depends heavily on family status. Before doing so, we note two points. First, the expected present value of benefits may underestimate the value to the recipient because benefits are paid as indexed annuities. In the absence of a well-functioning market for real annuities, risk averse households will value the benefits at more than their expected present value. Because the long-run financial solvency of Social Security is uncertain, considerable uncertainty exists concerning future benefits, especially for those retiring many years from now.[12] This risk discount probably partly offsets the annuity bonus for those in the 1945 cohort or younger. Of course, for those already retired, the annuity bonus dominates, and

Table 2
Comparison of Assumptions About Real Wage Growth
for Single-earner Couples of Low and High Earnings
(1985 dollars discounted at rate 3% to 1985)

Earnings Levels:		-----$10,000-----		---$50,000---	
	SSA Assumptions:	I	III	I	III
Year of Birth					
1945	P.V. Benefits	74,378	49,398	120,627	81,735
	P.V. Taxes	51,505	47,664	150,071	134,449
	P.V. Transfer	22,873	1,733	-29,444	-52,714
	Rate of Return	4.13%	3.11%	2.30%	1.47%
1960	P.V. Benefits	62,968	34,089	105,645	56,124
	P.V. Taxes	48,242	37,809	163,045	125,528
	P.V. Transfer	14,726	-3,720	-57,400	-69,404
	Rate of Return	3.81%	2.70%	1.69%	0.72%
1975	P.V. Benefits	59,551	25,520	99,100	42,366
	P.V. Taxes	44,828	28,366	152,446	94,274
	P.V. Transfer	14,723	-2,846	-53,346	-51,908
	Rate Of Return	3.86%	2.70%	1.72%	0.76%
1990	P.V. Benefits	55,743	19,353	92,874	31,714
	P.V. Taxes	41,345	20,922	140,546	69,484
	P.V. Transfer	14,398	-1,569	-47,671	-37,770
	Rate of Return	3.90%	2.78%	1.77%	0.81%

the deal is probably better than the figures presented in the tables indicate.

One type of uncertainty is over future economic and demographic conditions. In Table 2, we present estimates similar to those in Table 1A for the four cohorts beginning with 1945 under two alternative real wage growth assumptions: the 2-1/2 percent per year growth assumed by SSA in their optimistic scenario (I) and the 1 percent per year assumed in their pessimistic scenario (III). The rates of return decline as we move from the optimistic to the intermediate to the pessimistic real wage growth scenarios. The dollar amounts of transfers also follow this path except for the wealthy group in the 1975 and 1990 birth cohorts. This anomaly is similar to that reported above for the 1915 cohort, but in reverse: this group is playing for higher stakes for longer in a disadvantageous system, and therefore does better—in terms of Social Security transfers as opposed to lifetime earnings—with slower wage growth.

5. Intragenerational Transfers

The current Social Security system not only offers different rates of return to different generational cohorts, but also presents different households within a cohort with significantly different expected rates of return. We have examined the present value of expected benefits, taxes, and transfers for single men and women of different income levels and for married couples with different levels and compo-

sition of income. The results are shown in Table 3 for the cohort born in 1945.[13]

The uppermost segment of the table compares each expected present value of retirement benefits and Social Security taxes for singles and one-earner couples with the same level of earnings. In comparing the single male with the one-earner couple with the same earnings history, note that while the expected present value of taxes paid is the same, the expected present value of benefits is more than twice as great for the married couple. This is due to the fact that the couples receive an inflation-indexed joint survivor annuity with the initial benefit level set at 150 percent of the single person's benefit (as long as both spouses survive). The surviving member of the couple receives a benefit exactly equal to that of the single person. Thus, the benefits for couples are 50 percent greater for a period of time, and have a longer expected period of receipt. Naturally, these extra benefits for the same tax payments translate into a higher expected real rate of return. In fact, couples, regardless of the division of earnings, never do worse than two singles, because the system permits couples to claim their own benefits as if they were single. Of course, the fact that half of benefits may be subject to the personal income tax alters this relationship somewhat.

A second fact which is evident in the upper most panel of Table 3 is that single women receive a larger transfer (or a smaller negative transfer) and a higher rate of return than single men. This is primarily a consequence of the longer life expectancy of women and the fact that the benefit levels do not differ according to sex. Finally, that panel, and the rest of the table, illustrates that higher income households in this cohort receive a lower real rate of return and larger negative transfers than lower income households. At a three percent real discount rate (i.e. if the opportunity cost of funds is three percent), the single male loses $21,326 from the system if his wage at 25 is $10,000, but $87,112 if his wage at that age is $30,000, and $94,469 if his wage is $50,000. The middle and upper income single males actually have a negative expected real rate of return indicating that they cannot even expect to recoup the purchasing power of their Social Security taxes.

How Social Security treats various members of the same cohort differently can be expressed in several ways. If we still concentrate on the upper panel of Table 3, note that the rate of return ranges from −.79 percent to 3.50 percent. Given that this is a large program which covers one's entire adult lifetime, these rates of return differences translate into transfers ranging from +$8,981 to −$94,469. These figures are large relative to the typical value of a private pension and even relative to the median value of a house in the United States in 1985.

The remainder of Table 3 explores the situation of two-earner couples and compares their outcomes to singles with the same earnings record. Note that the expected present value of taxes paid by the couples is in all cases equal to the sum of the singles with the same earnings levels. The couples with a two-third/one-third income split still benefit from the spousal survivor benefit, and thus they do better than their "component singles." The final panel of Table 3 compares two-earner couples with a one-half/one-half earnings split with the corresponding singles. The general result is that the one-half/one-half couples do somewhat worse than the two-third/one-third couples and that they gain very little from the wives collecting survivor benefits as widows rather than benefits based on their own earnings histories.[14]

6. Marginal Linkage

Results reported thus far deal with the total or average relationship between Social Security taxes paid and benefits received. In this section we consider the marginal linkage between taxes and benefits.[15]

The marginal linkage between Social Security taxes and benefits, and the pub

Table 3
Comparison Across Family Types of
1945 Cohort, Various Earnings Levels
(1985 dollars discounted at rate 3% to 1985)

	Earnings Level (at 1985 wage index) (Husband-Wife earnings split)		
Family Type	10,000	30,000	50,000
Single-earner Couple	(10,000-0)	(30,000-0)	(50,000-0)
P.V. Benefits	57,932	101,554	93,783
P.V. Taxes	48,951	136,498	140,253
P.V. Transfer	8,981	-34,944	-46,470
Rate of Return	3.50%	2.07%	1.74%
Single Male	(10,000)	(30,000)	(50,000)
P.V. Benefits	27,625	49,386	45,784
P.V. Taxes	48,951	136,498	140,253
P.V. Transfer	-21,326	-87,112	-94,469
Rate of Return	1.16%	-0.44%	-0.79%
Single Female	(10,000)	(30,000)	(50,000)
P.V. Benefits	37,584	68,411	66,104
P.V. Taxes	46,900	130,802	144,723
P.V. Transfer	-9,316	-62,391	-78,617
Rate of Return	2.34%	1.00%	0.53%
Two-earner Couple	(6667-3333)	(20,000-10,000)	(33,333-16,667)
P.V. Benefits	49,144	87,287	100,414
P.V. Taxes	48,264	144,759	218,118
P.V. Transfer	880	-57,472	-117,704
Rate of Return	3.05%	1.46%	0.57%
Single Male	(6667)	(20,000)	(33,333)
P.V. Benefits	23,011	42,720	49,129
P.V. Taxes	32,635	97,871	139,970
P.V. Transfer	-9,624	-55,151	-90,841
Rate of Return	1.89%	0.31%	-0.53%
Single Female	(3333)	(10,000)	(16,667)
P.V. Benefits	21,280	37,579	50,252
P.V. Taxes	15,630	46,889	78,148
P.V. Transfer	5,650	-9,310	-27,896
Rate of Return	3.90%	2.34%	1.68%
Two-earner Couple	(5000-5000)	(15,000-15,000)	(25,000-25,000)
P.V. Benefits	48,066	80,777	103,178
P.V. Taxes	47,926	143,777	233,433
P.V. Transfer	140	-63,000	-130,253
Rate of Return	3.01%	1.22%	0.44%
Single Male	(5000)	(15,000)	(25,000)
P.V. Benefits	20,114	34,869	47,297
P.V. Taxes	24,476	73,427	119,304
P.V. Transfer	-4,362	-38,558	-72,007
Rate of Return	2.38%	0.59%	-0.05%
Single Female	(5000)	(15,000)	(25,000)
P.V. Benefits	27,847	47,013	65,742
P.V. Taxes	23,450	70,351	114,129
P.V. Transfer	4,397	-23,338	-48,387
Rate of Return	3.50%	1.80%	1.45%

lic's perception of this linkage, determine the extent to which individuals treat Social Security taxes as wage taxes or as forced savings (analogous to pension contributions) in their household economic decisions. To the extent that Social Security taxes are treated as wage taxes they add to the distortionary effects of income taxes (Auerbach and Kotlikoff (1985)). Since the distortionary effect of taxation rises with the square of the marginal tax rate, the 10.4 percent of most people's wage income currently contributed to Old Age and Survivor's Insurance could be nearly doubling the labor supply distortionary effects of income taxation. It may well be that uncertainty and lack of information about the benefits which one may expect reduce the perceived linkage between taxes and benefits (Boskin, Kotlikoff, and Shoven (1985)); here we consider the actual extent of linkage.

Table 4 presents the ratios of marginal discounted expected benefits divided by marginal discounted expected taxes for households of various composition and various total earnings. The marginal taxes are distributed over one's life in the same proportions as all one's Social Security taxes. The marginal benefits which result from these taxes depend on three factors: (1) one's bracket of the graduated, or "piece-wise linear," formula which converts one's earnings history into retirement benefits, (2) whether one collects benefits based on one's own or one's spouse's earnings history, and (3) the marginal income-tax rate which is applied to up to half one's benefits.

The formula which determines one's Primary Insurance Amount, the monthly benefit one can get based on one's own earnings when one does not retire early, has brackets in which a function of one's earnings history is multiplied by 90 percent, by 32 percent, and by 15 percent. Only those with very low earnings histories have marginal benefits determined within the 90-percent bracket; this bracket does not apply to any of the cases in Table 4.

Single males in the 32-percent bracket have a *gross-of-income-tax* marginal linkage ratio of 0.368; in the 15-percent bracket the linkage ratio is 0.173. Single females with a higher life expectancy, have linkage ratios of 0.503 in the 32-percent bracket and 0.236 in the 15-percent

TABLE 4
DISCOUNTED EXPECTED MARGINAL BENEFIT PER MARGINAL TAXES PAID, WITH EXTRA TAXES SPREAD OVER LIFETIME, NET OF INCOME TAXATION FOR 1960 COHORT AT 3% REAL DISCOUNT RATE

Earnings Level, Derived Marginal Income Tax Rate Post-Retirement	Contributor	1-earner Couple	2-earner Couple	Single Male	Single Female
$10,000					
Couples .08*	Male	.730†	.546†	.348†	—
Singles .113*	Female	0	.301†	—	.474†
$20,000					
Couples .14	Male	.357‡	.529†	.159‡	—
Singles .16	Female	0	.292†	—	.462†
$30,000					
Couples .18	Male	.338‡	.517†	.150‡	—
Singles .26	Female	0	.286†	—	.205‡
$50,000					
Couples .38	Male	•	.216‡	•	—
Singles .42	Female	0	.119‡	—	•

*At maximum tax.
† = 32% Social Security bracket.
‡ = 15% Social Security bracket.
Note: *Tax rates below 12% reflect an adjustment for the proportion of low-income households which owe taxes at all.

racket. In contrast to these numbers the gures reported in Table 4 reflect the reiction of these linkage ratios due to ime taxation of half one's benefits; hence, ey are slightly smaller.

In single-earner couples, wives receive th spouse benefits of half their husand's benefits while their husbands live d survivor benefits, equal to their husnds' full benefits, after their husbands e. As a result of the "joint survivor anuity" which such couples get for the same xes as are paid by single males, the arginal linkage is more than twice that r single males. *Gross* of income taxation is 0.760 in the 32-percent bracket and 356 in the 15-percent bracket.

Wives in our two-earner couple examles have histories of earnings slightly ower than those of their husbands. As a esult, they can receive higher benefits ased on their own earnings histories ather than on their husbands' earnings istories while their husbands live, but igher benefits based on their husbands' arnings histories after they are widwed. Thus, the linkage ratios for such ouples due to additional tax paid by the usband are between those for single nales and for one-earner couples—0.568 n the 32-percent bracket and 0.266 in the 5-percent bracket—while the linkage raios due to additional tax paid by the wife re below those for single females—0.314 n the 32-percent bracket, 0.147 in the 15ercent bracket.

In cases (not shown) where wife and usband earnings are exactly equal, each eceives benefits based only on their own arnings, and the marginal linkages are he same as for singles (except that as a ouple with a combined income they will be subject to a higher marginal income-tax rate). Where the wife's earnings are greater than the husband's earnings, the husband will receive survivor benefits based on the wife's earnings.

Where the husband's benefits are more than twice those of the wife, so that the wife gets a greater benefit as a spouse than she would based on her own earnings history, there is, of course, *zero* marginal linkage from her tax to benefits.

The most striking result in Table 4 is that in no case is the marginal linkage as high as one. Single-earner couples in the first row of the Table have a linkage of nearly three-fourths; all others do substantially worse. Family status has a substantial effect on linkage. Thus, the provision of a joint-survivor annuity to married males produces more than a doubling of the marginal linkage (as also the total benefit) given to single males. In contrast to the male in the 2-earner $30,000 couple whose marginal linkage is .517 the corresponding single male's is only .150. It might also be noted that the sum of the linkages for husband and wife in two-earner couples is often about the same as the linkages for single males and females with comparable earnings.[16]

It should also be noted that the extent of linkage varies with age. For the computation of benefits one's earnings history is indexed to wages, which are assumed to grow at a real rate of 1-1/2 percent. Our real discount rate is 3 percent. Thus one's later taxes "receive too low an interest rate" for a shorter period and one's later marginal taxes yield a greater amount in discounted marginal benefits. Furthermore, in the benefit computation formula only the 35 highest years of indexed earnings are considered, so that marginal taxes in other years have *no* linkage to benefits. Because we assume that wages increase with age as well as with economy-wide wage growth, in our examples all taxes paid through age 31 have no marginal linkage to benefit (the retirement age for the 1960 cohort is 67). For taxes paid at age 40, the marginal linkages for men are about 1.23 times those reported for taxes proportionally distributed over one's lifetime; for women the corresponding multiple is about 1.21 (these figures differ by sex because mortality varies by sex). For taxes paid at age 55, marginal linkages are 1.64 times greater for men and 1.55 times greater for women than the proportionately distributed taxes.

7. Sunk Taxes as a Political Problem

Table 5 considers the importance of "sunk" taxes in determining a family's in-

Table 5

The Political Issue in Social Security: Transfers and Rates of Returns Considering All Taxes Paid (A) vs. Only Taxes from 1987 on (B), 1945 Cohort. (Transfers in 1985 dollars, discounted at rate 3% to 1985)

Earnings Level	1-earner Couples		2-earner Couples		Single Males		Single Females	
	A	B	A	B	A	B	A	B
$10,000								
P V Transfer	8,981	33,658	140	24,555	-21,326	3,352	-9,316	14,835
Rate of Return	3.50%	6.94%	3.01%	6.29%	1.16%	3.61%	2.34%	5.22%
$20,000								
P V Transfer	-11,807	37,515	-32,029	16,801	-55,149	-5,827	-36,518	11,764
Rate of Return	2.61%	5.57%	1.76%	4.38%	0.31%	2.40%	1.53%	4.01%
$30,000								
P V Transfer	-34,944	28,734	-63,000	10,244	-87,112	-23,434	-62,391	165
Rate of Return	2.07%	4.48%	1.22%	3.61%	-0.44%	1.19%	1.00%	3.01%
$50,000								
P V Transfer	-46,470	19,698	-130,253	-14,376	-94,469	-28,301	-78,617	-11,871
Rate of Return	1.74%	4.04%	0.44%	2.42%	-0.79%	0.77%	0.53%	2.29%

terest in relation to possible changes in the Social Security system. It compares transfers and internal rates of return which various mid-career households can expect based only on future taxes with transfer and internal rates of return based on past taxes as well.[17]

For nearly all households the internal rate of return (where positive) at least doubles. For higher-income single-earner couples a "bad deal" becomes, treating bygones as bygones, a "good deal" while for higher-income households of other configurations a very bad deal becomes only moderately bad. Thus the $30,000 two-earner couple finds that its present value of sunk taxes exceeds by $10,000 its expected $63,000 net loss from Social Security. Single males with negative rates of return can expect positive rates of return on their remaining contributions—while their losses are reduced by seventy percent or more. For low-income households of all configurations and all moderate-income households other than single males, net transfers considering only future taxes are solidly positive.

The result of this is that many for whom Social Security is a bad deal over their lives as a whole would vote to continue the system in its present form.[18]

8. Conclusion

The results of this research certainly indicate that Social Security offers vastly different terms to households in various circumstances. The declining rates of return and transfers for later cohorts are probably inescapable given the maturing and the pay-as-you-go nature of the system. However, the magnitude of the differences in treatment of households of different income or marital status are enormous and receive little attention relative to the much smaller distributional issues which are prominently debated when considering income tax reform. Our belief is that the desirability of the transfers of the existing Social Security system deserves more attention.

Our examination of the marginal linkage of taxes and benefits indicates that only the extremely poor receive an extra dollar's worth of benefits for an extra dollar of taxes. For many households, the marginal benefit is only 15 to 30 cents, indicating that most of their Social Se-

ity contributions are correctly viewed axes; the marginal linkage is zero for st workers for the first decade or so of tributions.

he paper also offers a possible explaion of why Social Security retains espread political support despite modand very uneven expected rates of reIn. The reason offered is that it is comtely rational for voters to treat their t Social Security taxes as "sunk" and ply evaluate the program according to ure benefits and taxes. Since the tax ments precede the retirement bene-, any evaluation which truncates the ly years will bias the resulting rates return upwards.

Combined with the inevitable reexamition of the long-run financial solvency Social Security, these results suggest it explicit recognition of the immense tributional impact of Social Security be important input into decisions conning future reforma.

FOOTNOTES

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This value may very well be enhanced by the fact t the benefits are paid out as an inflation adjusted annuity

See Thompson (1983) for an overview of the broader ntext of the issues discussed in this paper.

HI is expected to begin running large deficits in 1990s, whereas OASDI is then expected to be runig surpluses. The ultimate HI deficit is several times projected maximum OASDI surplus.

A discussion of the provisions of Social Security nefit and tax formula may be found in Boskin (1986) any recent report of the Trustees of the Social Serity system.

A matter of some importance which we do not conder is the existence of beneficiaries other than rees and their spouses—especially the young chilen of retirees and deceased persons. Currently about of OASI benefits go to (or to surviving spouses on half of) such beneficiaries, and about 4% of benes are expected to go to such beneficiaries in the longn future. (Derived from *Social Security Bulletin*, 82 Annual Statistical Supplement, Table 54, and 85 Report of the Trustees of the Old Age and Surors and Disability Insurance Trust Funds, Table 1.) For further consideration of this issue see Bent (1979).

[6]Social Security Administration, Actuarial Studies No. 88 and No. 89, 1983.

[7]"Money Income of Households, Families, and Persons in the United States: 1983," Bureau of the Census, Current Population Reports, Series P-60, No. 146, Table 34. The figures are for wage, salary, and self employment income for all married households and unrelated individuals ages 25–64 with some such income.

[8]Dan Holik and John Kozielec, "Taxpayers Age 65 or Over, 1977–81," Internal Revenue Service, Statistics of Income Bulletin 4,1 (Summer 1984): 1–16, Table 2. The figures are for all income-tax returns filed for 1981 by those age 65 or over.

[9]The two sides of this argument are made most forcefully by Barro and Feldstein (1978), see Boskin and Kotlikoff (1986) for an empirical refutation of the Barro model.

[10]There is some ambiguity concerning these assumptions due to the fact that the OASDI system is not actuarially solvent over the next 75 years. See Boskin (1986) for a discussion of the magnitude, sources and implications of this problem.

[11]As reported in Hurd and Shoven (1985).

[12]See Boskin (1986).

[13]Our standard assumption has been that individuals enter the work force at age 21. We also looked at three alternative initial ages, 18, 25, and 30 for members of the 1945 birth cohort. The principal result is that those who delay entry into the labor force earn a higher rate of return and higher transfers. The reason is that only the highest 35 years of earnings are used in the calculation of Social Security retirement benefits. Thus, the "missing years" do not depress benefits. Looking at it the other way around, the taxes paid in the years in the labor force before age 30 have no effect on benefits and, therefore, no linkage.

Comparable results which eliminate the age profile of wages reduce both the taxes one pays, especially in ones' later working years, and one's benefits. Although one's marginal linkage of benefits to taxes is greater in one's later years, the result of this reduced participation in the Social Security system is still, usually, to increase both one's internal rate of return and one's net transfer.

[14]We also derived similar intragenerational transfer data for the cohort born in 1960. This cohort works one more year, and hence doesn't retire until age 67. This implies more taxes and a shorter annuity period. Offsetting this, however, is the fact that this generation is projected to have a longer life expectancy than the 1945 cohort. However, the range of transfers and rates of return is even wider. For the table as a whole, the rate of return varies from −1.40 percent to 3.08 percent and the transfer figures go from $1,093 to −$126,666. The general patterns are still that single women do better than single men, that single earner couples do better than two earner couples and that higher earnings households do worse than lower earnings households. The important point, however, is the enormous magnitude of the differences, which are larger than those which generate intense debate in the personal income tax, such as changing the exemption level.

[15]Gordon (1983), Burkhauser and Turner (1985), and Browning (1985) give substantial consideration to

marginal linkage and the extent to which the payroll tax is seen as a tax or as forced saving. We concur with Browning that the former two studies are flawed by their consideration of only the 32% bracket in benefit determination (discussed below) and by their use of extremely low real interest rates. 1% by Burkhauser and Turner and not much more by Gordon. Together these considerations multiply the derived linkage by a factor of three or four compared to our calculations, for households in the 15% bracket.

We go beyond Browning's work by considering future increased retirement age and income taxation of benefits and by considering a true distribution of possible ages of death, before and after retirement. The latter consideration captures the impact of more years of discounting of benefits received later.

Browning has an excellent treatment of the analytical issues and significance of marginal linkage. He also shows how use of various discount rates affects one's results.

[16]In viewing Table 4, one should be aware of the following anomaly. The net-of-tax linkages for one-earner couples with earnings levels of $20,000 or more are not based simply on the gross-of-tax linkages for the 15-percent bracket. There is some possibility that the husband will die before retirement with an earnings history which puts the determination of his widow's benefit in the 32-percent bracket. The linkages for such cases are weighted by their probability.

[17]See Browning (1975) for an excellent analytical treatment of the issues discussed here.

[18]Indeed they might vote to increase both taxes and benefits, leaving later generations with greater negative transfers.

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Appendix

Sensitivity of Results to Real Discount Rates

The extent of one's gains or losses under the Social Security system depends in large part on the real discount rate one applies to one's expected streams of taxes and benefits. Because benefits come later in life than taxes, a higher discount rate corresponds to a lower net transfer.

Economists differ in the discount rate they consider appropriate for calculations such as those in this paper. Some argue for a zero-percent real return as comparable to what is presumably available for truly safe assets in the market, while others argue that a rate as high as six percent corresponds to people's observed behavior (Browning (1985)). While we believe a real rate of three percent is most reasonable, we here present results for zero, two, and four percent as well.

Table 6 examines some of the cases from Table 3 to compare the present values of taxes, benefits, and transfers which result from applying these different real discount rates. The low-income couples, whose internal rates of return are between three percent and four percent have negative transfers when the higher discount rate is used instead of the three percent used in Table 3. The higher-income single-earner couple, which has a negative transfer at a discount rate of three percent, has a positive transfer at a rate of two percent. The

Table 6
Sensitivity of Present Values of Benefits, Taxes, and Transfers to Different Discount Rates for 1945 Cohort, Various Family Types and Earnings Levels (1985 dollars discounted to 1985)

arnings Level and amily Type	Discount Rates 0%	2%	3%	4%
10,000 Single-earner Couple (Rate of Return 3.50%)				
P.V. Benefits	172,388	82,483	57,932	41,069
P.V. Taxes	54,976	50,097	48,951	48,553
P.V. Transfer	117,412	32,386	8,981	-7,484
10,000 Two-earner Couple (Rate of Return 3.01%)				
P.V. Benefits	141,126	68,152	48,066	34,206
P.V. Taxes	53,666	48,991	47,926	47,597
P.V. Transfer	87,460	19,161	140	-13,391
$30,000 Single-earner Couple (Rate of Return 2.07%)				
P.V. Benefits	301,694	144,517	101,554	72,029
P.V. Taxes	157,995	141,229	136,498	133,830
P.V. Transfer	143,699	3,290	-34,944	-61,801
$30,000 Two-earner Couple (each earns .5) (Rate of Return 1.22%)				
P.V. Benefits	237,034	114,512	80,777	57,496
P.V. Taxes	160,999	146,973	143,777	142,791
P.V. Transfer	76,035	-32,460	-63,000	-85,295

higher-income two earner couple, however, has a negative transfer even at a rate of two percent

It will be noted that the present values of taxes for the cases here are roughly equal at each of the four discount rates. This is because discounting is done to about the middle of their taxpaying years. While later taxes are discounted more heavily at higher discount rates, earlier taxes are also grossed up more heavily.

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F. GENERATIONAL ACCOUNTS PRESENTATION

Government deficits, taxes, transfer payments, and other expenditures affect the distribution of income and wealth among different generations. Generational accounting is a new method for considering the fiscal treatment of different generations.[1] It is still being developed, and a number of the assumptions used to estimate the accounts are controversial.

Further development of generational accounts and other analyses of the intergenerational effect of the budget are needed to improve the quality of the estimates and the usefulness of the method. A chapter in the fiscal year 1993 Budget explained the concept and presented some illustrative results. This section updates the results for the baseline generational accounts and estimates the effects of new alternative policies. It also extends the analysis of generational accounts for the first time to lifetime net tax rates—the taxes that a generation pays, less the social security and other transfer benefits it receives, as a percentage of income over its entire lifetime.

The new analysis provides the following major conclusions:

- The lifetime net tax rates paid by Americans in the "baby boom" and successive generations is much higher than the net tax rates paid by Americans born earlier.
- Furthermore, the net tax rates paid by future generations will be substantially higher than those paid by the baby boom and other current generations, unless policy actions are taken now to mitigate this increase.
- The generational imbalance between newly born and future Americans could be largely eliminated by imposing a cap on mandatory spending (excluding social security) from 1993 through 2004 or by an appropriate surtax. Both policies would significantly increase the net taxes—the taxes paid less the transfers received—that are paid by current Americans. The increase for the newly born current Americans would be considerably more under a surtax than under a mandatory cap.

The Nature of Generational Accounts

The budget normally measures receipts and outlays for one year at a time, and it usually shows these estimates for only a few years into the future. This year's budgetary statement, however, shows long-range projections in Part Three and also shows projections to 2030 in Section E of Appendix One, "A Balance Sheet Presentation." The standard budget presentation, moreover, while it divides up receipts and outlays in a number of classifications, does not organize the results in a way that compares the effects of policy on different generations.

Generational accounts, in contrast, look ahead many decades; and they classify taxes paid and transfers received—such as social security, medicare, and food stamps—according to the generation that pays or receives the money. For an existing generation, they estimate its taxes and transfers year-by-year over its entire remaining lifespan; and they summarize these amounts for that generation in terms of one number, the present value of its entire annual series of average future tax payments net of transfers received. For future generations, generational accounts estimate the net payments based on the proposition that the government's bills will have to be paid either by people who are now alive or by future generations. They calculate how much future generations will have to pay on average to the government, above the amounts they will receive in transfers, if the government's total spending is not reduced from the projected path and if the people now alive do not pay more than projected.

Defined more precisely, generational accounts measure, as of a particular base year, the present value of the average future taxes that a member of each given generation is estimated to pay to the government minus the present value of the average future transfers that a member is estimated to receive. This difference is called the "net payment" in the following discussion. A generation is defined as all the males or females who are born in a given year.

Generational accounts can be used to make two types of comparison. First, they can be used to compare the lifetime net payments by future generations, by the generation of people just born, and by different generations of people born in the past. The lifetime net payments by generations born in the past are based on estimates of actual taxes paid and transfer payments received in past years up through 1991 as well as projections of taxes to be paid and transfer payments to be received in the future.

Secondly, generational accounts can be used to compare the effects of actual or proposed policy changes on the remaining lifetime net payments of generations currently alive and on future generations. Such com-

[1] Generational accounting was developed by Alan J. Auerbach, Jagadeesh Gokhale and Laurence J. Kotlikoff. See Auerbach, Gokhale and Kotlikoff, "Generational Accounts: A Meaningful Alternative to Deficit Accounting," in David Bradford, ed., *Tax Policy and the Economy*, vol. 5 (MIT Press for the National Bureau of Economic Research, 1991), pp. 55-110 and Kotlikoff, *Generational Accounting—Knowing Who Pays and When for What We Spend* (New York: The Free Press, 1992).

parisons can be made equally well both for policies that change the totals of receipts or expenditures and for those that change the composition of the budget without affecting the deficit.

Generational accounts have a number of limitations as they are now constructed. These accounts, unlike almost every other table in this budget, include the taxes and transfers of all levels of government alike—Federal, State, and local. The baseline generational accounts thus do not show the separate effect of the Federal budget as a whole. However, the difference in generational accounts due to a Federal Government policy change can be analyzed alone. Thus, this treatment does not limit generational accounts as a method for assessing the effects of a change in Federal policy.

Generational accounts reflect only taxes paid to the government and transfers received. They do not impute to particular generations the value of the government purchases of goods and services made to provide them with education, highways, national defense, and other services. Therefore, they do not show the full net benefit or burden that any generation receives from government fiscal policy as a whole, although they can show a generation's net benefit or burden from a particular policy change that affects only taxes and transfers. In the future, it may be feasible to impute the value of certain types of government purchases to specific generations.

Generational accounting does not, as yet, incorporate any feedback of policy on the economy's growth and interest rates. Feedback effects can be significant, but they generally occur slowly, so their impact on the discounted values used in the generational accounts may be small. Moreover, there is reason to believe they would reinforce the conclusions derived here. For example, policies that decrease the net payment by current generations and increase the net payment by future generations are likely to reduce investment over time. This, in turn, will lower real wage growth and raise real interest rates, which on balance will harm future generations in absolute terms.

Generational accounting divides the people born in the same year into only two categories, males and females, each designated a "generation." This is an important distinction, for males and females differ significantly in characteristics such as lifetime earnings and longevity. However, it does not reveal differences with respect to other characteristics, such as income level or race, nor does it reveal the wide diversity among individuals within any grouping. The categories would be expanded if more data were available.

Even within the scope of generational accounts as now constructed, the results in this chapter should be viewed as experimental and illustrative. They are limited by the availability and quality of data, especially for earlier years. In addition, they are necessarily based on a number of simplifying assumptions, about which reasonable people may disagree, concerning the pattern of future taxes and spending, the interest rate used to discount future taxes and transfers to form present values, mortality and birth rates, and so forth. The absolute amounts of the generational accounts are sensitive to these assumptions. However, the generational accounts can be illuminating when considered in the light of their assumptions, as has been the case for the 75-year projections made every year by the social security trustees. Moreover, the most fundamental result holds for a wide range of reasonable changes in the assumptions: the net payment by future generations is relatively much larger than the net payment by the generation just born.

The following sections illustrate the results of generational accounting. A technical note at the end explains the concepts, calculations, and other assumptions more fully.

The Remaining Net Payments by Existing Generations

Tables F–1 and F–2 show the generational accounts as of calendar year 1991 for every fifth generation of males and females alive in that year. The first column, "net payment," is the difference between the present value of taxes that a member of each generation will pay, on average, over his or her remaining life and the present value of the transfers he or she will receive. The other columns show the average present values of the different taxes and transfers. All Federal, State, and local taxes and transfers are included in these calculations. Because of the time needed to prepare these estimates, Federal spending and receipts are based on the baseline in the Mid-Session Review of the 1993 Budget rather than the projections in the present budgetary statement.

The present value of the future taxes to be paid by the young and middle aged generations is much more than the present value of the future transfers they will receive. For males who were age 40 in 1991, for example, the present value of future taxes is $180,000 more than the present value of future transfers. The amounts are large because these generations are close to their peak tax paying years. For newborn males, on the other hand, the present value of the net payment is much smaller, $79,000, because they will not pay much in taxes for a number of years.

The older generations, who are largely retired, will receive more social security, medicare, and other future benefits than they will pay in future taxes. That is, they have negative net payments. Females have smaller net payments than males, mostly because they earn less income and therefore pay less income and social security taxes.

Table F-1. GENERATIONAL ACCOUNTS FOR MALES: PRESENT VALUE OF TAXES AND TRANSFERS AS OF 1991

(In thousands of dollars)

Generation's age in 1991	Net payment	Taxes paid				Transfers received		
		Labor income taxes	Capital income taxes	Payroll taxes	Excise taxes	Social security	Health	Welfare
0	78.9	29.2	10.1	31.8	28.2	6.1	11.0	3.3
5	80.7	37.5	12.9	41.0	33.3	7.7	13.1	4.2
10	125.0	47.8	16.5	52.3	38.7	9.2	15.7	5.4
15	157.2	61.1	21.2	67.1	44.6	10.7	19.2	6.9
20	187.1	73.5	26.5	81.9	48.3	11.8	22.2	8.4
25	204.0	80.4	33.1	89.5	49.1	14.6	24.3	9.0
30	205.5	80.4	39.9	89.8	48.5	18.0	25.4	8.6
35	198.8	77.6	46.8	87.0	47.8	22.6	29.7	8.0
40	180.1	71.0	52.3	79.9	46.9	28.5	34.1	7.3
45	145.1	59.8	55.4	67.6	44.5	35.9	39.6	6.6
50	97.2	45.6	55.3	52.0	40.7	45.2	45.4	6.0
55	38.9	30.2	52.2	34.5	36.2	57.1	51.8	5.3
60	−23.0	16.2	46.4	18.6	30.8	72.4	58.1	4.6
65	−74.0	5.7	39.0	6.6	25.6	82.3	64.6	3.9
70	−80.7	2.4	30.9	2.7	20.4	75.5	58.2	3.4
75	−75.5	1.1	23.6	1.3	15.5	63.3	50.9	2.8
80	−61.1	0.6	18.0	0.7	11.0	47.9	41.5	1.9
85	−47.2	0.2	15.0	0.3	7.6	36.4	33.1	0.9
90	−35	—	7.1	—	1.7	6.5	5.8	*
Future generations	166.5	—	—	—	—	—	—	—
Percentage difference in net payment future generations and age zero	111.1	—	—	—	—	—	—	—

*$0.05 thousand or less

Table F-2. GENERATIONAL ACCOUNTS FOR FEMALES: PRESENT VALUE OF TAXES AND TRANSFERS AS OF 1991

(In thousands of dollars)

Generation's age in 1991	Net payment	Taxes paid				Transfers received		
		Labor income taxes	Capital income taxes	Payroll taxes	Excise taxes	Social security	Health	Welfare
0	39.5	15.1	3.7	16.5	27.3	5.8	9.6	7.7
5	48.7	19.4	4.8	21.2	32.0	7.3	11.5	9.9
10	59.4	24.7	6.1	27.0	36.8	8.7	14.0	12.5
15	72.4	31.4	7.9	34.6	41.8	10.0	17.3	16.0
20	84.0	37.1	9.8	41.3	45.0	11.1	20.0	18.2
25	86.4	38.5	12.3	42.9	46.1	13.7	23.2	16.5
30	81.1	36.2	15.5	40.5	46.1	17.0	26.9	13.4
35	71.9	33.3	19.1	37.4	46.1	21.3	32.1	10.7
40	55.3	29.0	22.3	32.7	45.2	26.9	38.8	8.2
45	29.5	23.1	24.8	26.2	43.2	34.2	47.4	6.1
50	−2.2	16.7	26.1	19.0	39.5	43.5	56.4	4.6
55	−39.5	10.8	26.0	12.3	35.2	55.6	64.4	3.7
60	−80.8	5.6	24.4	6.4	30.3	71.4	73.1	3.1
65	−112.5	2.0	21.7	2.3	25.3	80.3	80.8	2.7
70	−110.6	0.8	18.0	0.9	20.6	74.2	74.4	2.4
75	−100.6	0.4	13.8	0.4	15.8	63.0	65.8	2.1
80	−83.3	0.2	9.3	0.2	11.6	49.5	53.3	1.7
85	−65.6	0.1	4.7	0.1	8.9	36.8	41.1	1.4
90	−9.8	—	0.5	—	1.6	5.6	6.0	0.2
Future generations	80.4	—	—	—	—	—	—	—
Percentage difference in net payment future generations and age zero	111.1	—	—	—	—	—	—	—

Since the figures in these tables show the *remaining* lifetime net payments of particular generations, they do not include the taxes a generation paid in the past or the transfer payments it received in the past. This needs to be kept in mind in considering the net payments by those now alive. The portion of a generation's remaining lifetime net payments depends on whether it is 10, 40, or 65 years old. The fact that 40 year-old males can expect to pay more in the future than they receive, in present value terms, while the reverse is true for 65 year-old males, does not mean the Federal, State, and local governments are treating 40 year-old males unfairly. Males who are now 65 paid considerable taxes when they were younger, and these past taxes are not included in the remaining lifetime net payments shown in their generational ac-

counts. Therefore, the remaining lifetime net payment by one existing generation cannot be directly compared with that of another. The lifetime net payments of different generations can only be compared using the lifetime net tax rates discussed below.

The estimates of future net payments by generation are affected by the amounts of taxes, transfers, and other government expenditures assumed year-by-year in the baseline projection. These assumptions could differ widely. As explained in the technical note, the methods of projection generally seek to maintain current policy in some sense. However, "current policy" can be interpreted in different ways, especially for expenditures such as defense; and the long-term projections for medicare and medicaid assume that eventually policy actions or other forces will hold the spending growth to the overall rate of economic expansion (adjusted for shifts in the age and sex composition of the population), even though the growth rate is still quite rapid for the next few decades.[2]

The Net Payments by Future Generations

Future generations—those born in 1992 and later—are estimated to make a 111 percent larger net payment to the government, on average, than those born in 1991. The $166,000 average net payment by future males and the $83,000 average net payment by future females are calculated assuming that the ratio of net payments by males to that of females is the same for future generations as those born in 1991. The calculations also assume that all people of a particular sex born in the future will make the same average net payment over their lifetimes after adjusting for economic growth.

A growth adjustment is needed to the average payment because future generations will pay more in taxes, net of the transfers they receive, simply because their incomes will be higher. To properly assess the net payment by future generations relative to the newly born, it is necessary to calculate the net payment they would make above and beyond the amount due to economic growth. The generational accounts assume that all future generations pay the same net amount apart from the adjustment for growth. This net amount is the number shown in the table for all future generations of the same sex.

A generational imbalance, as defined before, is calculated in such a way that the generations now alive, including the newly born, do not pay any more taxes (or receive any less transfers) than projected in the baseline. This assumption is an analytical device for determining the size of the Nation's fiscal imbalance; it is not meant to suggest that future generations will in fact close the gap all by themselves. Any actual policy change is almost certain to bear in some degree on generations now living as well as those to be born in the future. If such a policy change is made, the percentage difference in net payments between the newly born generations and future generations would be less than shown in this table. Policy changes of this kind are illustrated below.

The size of the imbalance between future generations and the newly born is sensitive to the assumptions about the interest rate used for discounting and the growth rate of the economy. Table F–3 shows the percentage differential under alternative assumptions. It considers interest rates of 3, 6, and 9 percent and productivity growth rates of 0.25, 0.75, and 1.25 percent. The central assumptions used in this chapter were an interest rate of 6 percent and a growth rate of 0.75 percent. This led to a 111 percent larger net payment by future generations than the newly born. Under the alternatives in table F–3, the difference ranges from 65 percent to 228 percent. While this range is large, the basic conclusion holds for all alternatives. Future generations are estimated to make a much larger payment of taxes to the government, net of transfers received, than those just born.

Table F–3. PERCENTAGE DIFFERENCE IN NET PAYMENTS OF FUTURE GENERATIONS AND AGE ZERO FOR ALTERNATIVE ASSUMPTIONS

[illegible]	[illegible]		
	0.25	0.75	1.25
3.0	117	86	65
6.0	136	111	87
9.0	228	183	152

The generational imbalance also depends on the policy assumption that all future generations of the same sex have the same net payment (after adjusting for growth). Alternatively, suppose that the future generations born during 1992–2001 pay only the same amount as the generation born in 1991. Because these future generations pay less than previously assumed, the future generations born after 2001 will have to make a net payment that is 186 percent larger, rather than 111 percent larger, than the net payment of the 1991 generation. The greater the number of future generations who pay no more than current newborns, the larger is the net payment that will be required of generations who are born still later.

Change in the Imbalance Between 1990 and 1991

The estimated 111 percent imbalance in 1991 between newborns and future generations can be compared with the estimated 79 percent imbalance in 1990 reported in the fiscal year 1993 Budget. The difference primarily reflects lower baseline receipts projected for 1993–2004. Based on last year's projections, the estimated 1991 imbalance would be 81 percent. A second

[2] A full extrapolation of recent trends in control would imply that [illegible] would eventually bankrupt the Government.

factor is that one more generation, the generation born in 1991, does not make the higher lifetime net payments required of future generations.

Illustrative Policy Changes

Table F-4 compares two alternative policies to rectify the fiscal imbalance between the generation just born and future generations. They would remove the imbalance to about the same degree but would have quite different distributive effects among different generations.

The first of these policies is a cap on the spending of all mandatory programs except social security and deposit insurance. From 1993 to 2004, the savings from the cap would be calculated for each mandatory program with beneficiaries as the difference between (1) baseline spending and (2) spending limited to the growth rate in the number of beneficiaries plus the inflation rate (with a little additional growth allowed in the first two years for transition). Medicare and medicaid are the largest mandatory programs, and they produce most of the total savings. For these two programs, spending would be limited to the amount determined by the calculation of the cap. For all other mandatory programs (except social security and deposit insurance), the required savings would be spread across-the-board as a proportionate reduction in spending. Employing the economic assumptions used for the 1993 Mid-Session Review (and extended to the years after 1997), the consolidated budget is projected to be balanced under the cap in 2004.[3] Thereafter, the spending growth rates for mandatory programs would be the same as in the baseline. However, because the level of mandatory spending in 2004 would be lower than under the baseline, applying these same growth rates would produce permanently lower levels of subsequent spending.

The cap on mandatory spending would largely eliminate the imbalance in net payments between future generations and those just born. Future generations would pay 12 percent more, instead of 111 percent more. The net payment by males in future generations would be $71,000 less than under the baseline, on average, and the net payment by females would be $33,000 less.

All existing generations would have a larger net payment. In terms of age, the largest increase would be for people who are now around 55 to 60 years old. This is because the cap would mostly reduce transfer payments for health care, especially medicare, and medicare is received almost only by the elderly. The increase in net payments would be higher for females than males at almost every age, because they live longer and the cap primarily reduces transfers to the elderly.

The second policy is a surtax on the Federal individual income tax. From 1993 to 2004, the amount of the surtax would equal the amount of the spending reduction that would be required under the mandatory cap. After 2004, the amount of the surtax would increase at the same rate as other taxes generally increase.

[3] The budget would not necessarily be balanced in all later years. Generational balance over a period takes as a whole is consistent with some years of deficit, and the illustrative policies do not entirely eliminate the imbalance.

Table F-4. CHANGE IN GENERATIONAL ACCOUNTS DUE TO ALTERNATIVE POLICIES AS OF 1991

(In thousands of dollars)

Generation's Age in 1991	Males		Females	
	Mandatory Caps	Surtax	Mandatory Caps	Surtax
0	6.4	16.1	5.4	7.5
5	7.7	19.2	6.6	8.9
10	9.1	22.4	7.9	10.4
15	10.5	25.3	9.3	11.4
20	11.1	26.1	10.4	11.6
25	11.8	25.5	11.8	11.1
30	12.6	24.0	13.5	10.4
35	14.0	21.8	15.9	9.4
40	15.9	18.8	18.7	8.2
45	18.2	15.1	22.0	6.6
50	20.7	11.2	25.6	5.3
55	23.0	7.6	29.2	4.0
60	23.2	4.9	30.3	2.8
65	20.0	3.1	27.4	1.9
70	15.6	2.0	22.7	1.2
75	11.0	1.2	16.9	0.6
80	6.6	0.7	10.2	0.2
85	2.5	0.3	3.6	*
90	—	—	—	—
Future generations	-71.3	-67.2	-33.2	-26.3
Percentage difference in net payment: future generations and age zero	11.7	15.1	11.7	15.1

* $0.05 thousand or less.

The surtax would reduce the generational imbalance by almost as much as the mandatory cap. Future generations would pay 15 percent more than those just born, compared to 12 percent under the cap and 111 percent under the baseline. The average male member of future generations would pay $57,000 less, and the average female would pay $29,000 less. All existing generations would pay more.

However, the distributional effect of the surtax would be quite different from the mandatory cap. The surtax would bear much more on the relatively young; the cap, on the relatively old. For example, a 65-year old male would pay $3,000 more under the surtax than the baseline but would pay $20,000 more under the cap; in contrast, a 20-year old male would pay $26,000 more under the surtax but $11,000 more under the cap. This is because the surtax is paid disproportionately by younger people earning income, whereas the cap disproportionately reduces transfer payments to older people.

The second distributional difference is between males and females. The surtax bears more on males; the cap, on females. This is primarily because males tend to have higher incomes and pay more income taxes, whereas females tend to live longer and receive more health care transfers.

The two policies also have different distributional effects between existing and future generations. The reduction in net payments by future generations is less under the surtax: $14,000 less for males, on average, and $4,000 less for females. This is partly because a larger imbalance remains between future generations and those just born, 15 percent compared to 12 percent. The improvement for future generations is less under the surtax, because the older generations do not pay as much more.

Historical Lifetime Tax Rates

The analysis so far has been prospective, considering only the present value of future taxes and transfers as of 1991 for existing generations and generations yet to be born. A prospective analysis can compare policy changes; and it can compare the lifetime fiscal burdens of the newly born and future generations, because their entire lifetimes are in the future. However, it cannot compare the lifetime fiscal burden on one existing generation with the lifetime fiscal burden on another existing generation born in a different year—or with future generations—because part of any living generation's taxes and transfers were in the past and therefore are not taken into account.

A comparison of one existing generation with another must be based on its entire lifetime taxes and transfers. Table F–5 shows the results in terms of lifetime net tax rates for different generations born since 1900 and future generations. The lifetime net tax rate of a generation is defined as the present value of its lifetime net taxes (taxes less transfers) divided by the present value of its lifetime income. The present values are calculated as of the generation's year of birth, so that each generation can be compared from the standpoint of when it was born. The lifetime net taxes are the same as the generational account for a generation in the year of its birth. (As shown in table F–1, the lifetime net taxes of the males born in 1991 was $78,900.) Since lifetime taxes, transfers, and income have trended upward and have fluctuated to some extent, it is more appropriate to compare the relative fiscal burden on different generations in terms of lifetime net tax rates rather than in terms of absolute amounts.

The lifetime net tax rates are calculated from historical data on taxes, transfers, and income up to 1991 and projections of future data as described for the previous sections. Historical data, however, are not available to the same extent as the data for recent years that underlie the projections, and in some cases they are not available at all. A technical note at the end of this section summarizes the methods of constructing the historical series.

Table F–5. LIFETIME NET TAX RATES, TAX RATES, AND TRANSFER RATES

(In percentages)

	Males			Females			Average of Males and Females		
	Net Tax Rate	Tax Rate	Transfer Rate	Net Tax Rate	Tax Rate	Transfer Rate	Net Tax Rate	Tax Rate	Transfer Rate
1900	17.8	18.8	1.0	35.3	43.9	8.7	27.5	24.8	3.3
1910	21.8	24.8	2.8	35.7	46.8	13.9	24.7	25.8	5.2
1920	24.2	27.7	3.5	34.0	50.4	16.5	29.3	32.5	8.2
1930	26.4	30.5	4.1	34.4	52.8	18.5	28.1	30.3	7.2
1940	28.2	33.0	4.8	32.7	50.6	17.6	29.3	31.3	8.1
1950	30.8	38.8	8.2	30.6	46.9	16.3	30.8	36.5	9.3
1960	32.3	39.8	7.2	31.5	47.8	16.4	32.1	47.3	12.2
1970	33.8	41.7	8.1	32.5	50.3	17.8	33.2	44.5	11.3
1980	34.1	42.4	8.3	33.1	51.8	18.5	33.8	45.5	11.7
1990	33.9	42.7	8.7	32.9	52.0	19.1	33.6	45.7	12.2
1991	33.9	42.7	8.8	32.8	52.0	19.2	33.5	45.8	12.2
Future Generations	71.5	—	—	69.3	—	—	71.1	—	—

Lifetime calculations also introduce a number of conceptual issues. For example, how should lifetime income be measured? Lifetime income is defined as a present value, like lifetime taxes and transfers. The present value calculation should include all income that increases a generation's resources: labor earnings, inherited wealth, and capital gains over and above the normal return to saving. The normal return to saving is not itself included in income, because that would be double counting. Saving and earning a normal rate of return does not increase the present value of a household's resources. Data do not exist on the share of each generation's income that has come from inherited wealth or supernormal capital gains, so labor earnings are used to represent income.[4]

The lifetime net tax rate for males in the base case exhibits a strong upward trend, rising from 18 percent in 1900 to 34 percent in 1970 and succeeding years. The lifetime net tax rate for females exhibits a quite different behavior. It started much higher than males, at 35 percent, declined irregularly for a half century, and afterwards rose slightly. Since 1950 the net tax rate has been about the same for males and females.

The behavior of the female net tax rate is an artifact of increasing labor force participation and the method used to attribute labor earnings and taxes within a family. Labor earnings are attributed to the person who receives them; some taxes, including excises, are attributed equally to husband and wife. The lower female earnings thus contribute to a higher female tax rate, especially in the early decades of the century. At the same time, the rise in female labor force participation over time has caused female earnings to increase faster than male earnings without directly increasing those taxes that are attributed equally to husband and wife. This has offset the general increase in taxes that contributed to the rising net tax rates observed in the series for males.

This pattern emphasizes a conceptual question in calculating generational accounts. How should income, taxes, and transfers be attributed within a family? Excise taxes could alternatively have been attributed in proportion to labor earnings, or labor earnings could have been attributed equally between husband and wife. Table F–5 displays one answer to this question by also showing lifetime net tax rates for males and females together, calculated as a weighted average of the net tax rate for each sex. The average net tax rate rises significantly for most of this century, increasing from 22 percent for the generation born in 1900 to 32 percent for the generation born in 1960, and to about 33 percent for the generations born since 1970. This trend reflects the growing fiscal role of government. The average net tax rate for future generations is 71 percent, which is the same percentage difference compared to people newly born in 1991 as the percentage difference shown in tables F–1 and F–2. The male and female net tax rates are virtually the same for future generations.

Table F–5 also breaks down the net tax rates between gross tax rates and transfer rates. To calculate these latter rates, the present value of a generation's lifetime taxes (or transfers) is divided by the present value of its lifetime income. This breakdown reveals the expanded role of government transfer payments during the past century. The lifetime transfer rate for males and females taken together nearly quadrupled between the generations born in 1900 and those born in 1991, starting at 3.3 percent and increasing each decade to a rate of 12.2 percent. The increase was more rapid, in both relative and absolute terms, for the generations born before World War II than afterwards.

Because of the growth in the transfer rate, the gross tax rate has not leveled off in the past two decades to the same extent as the net tax rate. The gross tax rate for males and females taken together nearly doubled between the generations born in 1900 and 1991, starting at 24.8 percent and increasing each decade to a rate of 45.8 percent. A generation's lifetime taxes pay for the purchases of goods and services as well as transfers and pay for transfers to other generations as well as its own.

The breakdown further shows that the similarity between males and females in lifetime net tax rates masks very different gross tax and transfer rates. Each rate is much higher for females, which reflects such factors as females' lower lifetime income and greater longevity (as well as the attribution assumptions for taxes and income within the family).

Table F–6 shows how policy changes designed to rectify the generational imbalance would affect the lifetime net tax rates of different generations. For future generations, the cap on mandatory spending reduces the lifetime net tax rate on males and females together from 71 percent to 41 percent, and the surtax reduces it to 46 percent.

For existing generations, the effect of the policy change on lifetime net tax rates is greater as the generation is younger; and for the very youngest generations, born in 1991, it is quite significant. Under the mandatory cap, the lifetime net tax rate of the generation born in 1991 increases by 2.7 percentage points for males. For females, who will live longer, the increase is 4.5 percentage points. A surtax would raise the burden on this generation still more: an increase over the baseline of 6.9 percentage points for males and 6.3 percentage points for females. For older generations, the increase in the lifetime net tax rate is smaller, primarily because the absolute effects of the

[4] The error due to this omission is relatively small in the aggregate, given that labor income has long accounted for three-fourths of all income and that only part of the remaining income from capital should be included. However, the errors for different generations [illegible] in present values and because behavior

expenditures; and (2) those that are more nearly pure public goods, such as defense and public safety. Purchases per person in each of the three age groups, and purchases of public goods per capita, all increase at the assumed rate of productivity growth.

The economic value of the government's assets that yield income, less the government debt, was estimated to be the cumulative amount of the NIPA deficit since 1900 converted to constant dollars by the GDP deflator.

The average growth-adjusted net payment to be made by future generations was determined using the aggregate present value of the net payment (as derived through the present value budget constraint), the assumed productivity growth, and the projected size of future generations. The size of future generations was estimated using the social security alternative II projection through 2066 and the demographic assumptions for 2066 applied to later years.

Historical Lifetime Net Tax Rates.—Lifetime net tax rates for generations born between 1900 and 1991 were calculated by dividing the generational account of each generation at birth by its human wealth—the present value at birth of its future labor earnings. The calculation of a generation's human wealth requires knowing its average labor earnings in each future year. The average labor earnings received by particular generations in particular years was determined by distributing aggregate labor income by age and sex using cross-section distributions of labor income found in cross-section survey data. The lifetime generational accounts for generations born between 1900 and 1991 are based on actual taxes and transfers between 1900 and 1991 and projected taxes and transfers in years after 1991.

Aggregate labor earnings, taxes, and transfers were obtained from the national income and product accounts for 1929 and later years. Pre-1929 aggregate labor earnings were from series in *Historical Statistics of the United States, Colonial Times to 1970.* Pre-1929 taxes and transfers were from the 1982 Census of Governments, *Historical Statistics on Government Finances and Employment.* Various cross-section surveys were used to distribute aggregate labor earnings, taxes, and transfers by age and sex. Cross-section surveys prior to the early 1960s were not available for this study, so surveys from years after 1960 were used for earlier years. The Current Population Surveys were used for labor earnings and taxes on labor earnings in 1964 and later years, and the 1964 survey was used for earlier years.

Prepared Statement of Senator Daniel Patrick Moynihan

We meet this morning for a regular oversight hearing of the Finance Committee on the Social Security program. Today's topic is the "money's worth" of Social Security.

We are interested to hear the views of our distinguished witnesses on a recent paper by Robert J. Myers and Bruce D. Schobel entitled "An Updated Money's-Worth Analysis of Social Security Retirement Benefits." Bob Myers, as most here would know, is the former chief actuary of Social Security who in 1934 was a member of that inestimable group that created our Social Security system. Bruce Schobel, his younger colleague, is also an actuary of distinction who was formerly with the Social Security Administration and now is with the New York Life Insurance Company.

Their analysis compares the amounts that workers paid into Social Security in Old-Age and Survivors Insurance taxes, with interest, to the amounts that they can expect to get back in retirement benefits. The analysis suggests that, under the assumptions used by the authors, workers who retired in the past received or are receiving benefits of greater value than the Social Security taxes they and their employers paid, but that some workers retiring now and in the future will not get their money back.

Of course, this is not the whole story, and the authors do not suggest that it is. Even if we exclude from the calculations the taxes workers pay for disability insurance and Medicare, as Myers and Schobel have done, there is still the value of survivors insurance to consider. We often think of Social Security as a program for the elderly. But survivors insurance also protects children against the loss of a working parent. At the end of 1992 there were approximately 7.3 million recipients of survivors benefits, of whom 1.8 million were children. And Social Security assures young workers that their parents and grandparents will enjoy a retirement income that will enable them to live independently and with dignity.

We must consider, too, that the program has certain redistributive goals. Benefits are figured according to a progressive formula that replaces a higher percentage of lower wages than higher wages. If the goal were simply to pay back to workers the amounts that they paid in, we would pay much less in retirement benefits to those who spent their lives working in low-paying jobs. We have seen fit to do otherwise. We seek, in essence, to strike a balance between individual equity and social adequacy.

Our purpose, then, is to ask our expert witnesses for their respective views on the appropriate use of a money's worth analysis of Social Security. We do so out of recognition of the fact, and it is a fact, that the Social Security program is our Nation's most important and successful domestic program, and that it is a duty of this Committee to take care that it be properly maintained.

PREPARED STATEMENT OF ROBERT J. MYERS

Mr. Chairman and Members of the Subcommittee: My name is Robert J. Myers. I served in various actuarial capacities with the Social Security Administration and its predecessor agencies during 1934-70, being Chief Actuary for the last 23 of those years. In 1981–82, I was Deputy Commissioner of Social Security, and in 1982–83, I was Executive Director of the National Commission on Social Security Reform. In 1983–85, I was Chairman of the Railroad Unemployment Compensation Committee, and in 1987–90, I was Chairman of the Commission on Railroad Retirement Reform.

There has always been widespread interest among the general public as to whether people get their money's worth under the Social Security program (Old-Age, Survivors, and Disability Insurance) from the taxes (or contributions) paid. Certainly, the program should be reasonably fair and equitable in this respect in order to have widespread public support. However, the program need not pass a rigid, precise test such that relatively small failures to meet it would mean that the program is unacceptable.

In the broad aggregate, the Social Security program does meet the money's worth criterion, because almost all of the contributions collected are used to pay benefits, either currently or in the future. Specifically, administrative expenses use up well less than 1% of the taxes collected—actually, 0.8% currently.

On the other hand, under the very narrow (and unacceptable) definition of money's worth as being the return of at least the contributions plus appropriate interest in every single case—as is true for bank deposits—the program would fail to meet the test. However, like almost any insurance or pension program, the value of the protection must be considered, regardless of the fact that, for some persons, the dollar amount of the benefits actually received will be less than the contributions made.

There are many cases, both under Social Security and under private insurance, where no benefits at all are paid. This is so under Social Security for an individual who dies before retirement and leaves no surviving dependent—just as is also the case for a fire insurance policy when the house does not burn down during the term of the policy. What counts under these circumstances is that the individual had potential benefit protection at various times—as, for instance, under Social Security, against the risk of becoming disabled, or the risk of reaching retirement age and living many years beyond, or the risk of having dependents who could draw benefits at the death of the worker.

In considering the money's-worth question, there is the important matter as to whether to take into account only the employee contributions, or whether to use the employer contributions as well. As to self-employed persons (who pay the combined employer-employee contributions), it is fair to say that the person involved is both an employee and an employer.

Economists generally believe that the employer contributions are a part of employee remuneration and therefore are really paid by the employees. I believe that this is reasonably so when considered in the aggregate, but not necessarily so when considered individual by individual. In other words, I do not believe that the employer contributions are individually assignable under all circumstances. In the absence of Social Security, it is not a certainty that each employee would receive additional pay equal to the employer contributions. Rather, the employer might establish pension and other benefit programs which would not distribute the monies on a proportionate basis, but might give more to some groups, such as those near retirement age, and less to others.

It is important to recognize that, if one considered the combined employer-employee contribution rate in money's-worth analyses, some people will get more that their money's worth, and other people must inevitably get less. This is so because, on the whole, the program is intended to be fully self-supporting from the contributions, and some must "lose" if others "win." Those who get more than their money's worth consist of groups like those who retired in the early decades of operation and those who have low earnings. On the other hand, those who get less than their money's worth are essentially high-paid persons who are covered under the program for many years, especially off in the future.

The combined employer-employee basis for measuring money's worth is a valid test as to the extent of so-called "windfalls" for retirees, both currently and in the past. The basis of considering only the employee contributions is desirable as an extreme test of whether there is any extensive unfairness under the program.

The analytical approach that Bruce Schobel and I have adopted in our study "An Updated Money's-Worth Analysis of Social Security Benefits" is intended to be on a relatively simplified basis, so that persons who are not actuaries can readily understand it, and even replicate the results. We accumulated the past employee OASI contributions with interest up to the Normal Retirement Age, using the actual average interest rates earned by the trust funds each year in the past and the assumed interest rates in the intermediate-cost estimate in the 1991 Trustees Report for future years. We excluded the DI and Medicare HI contributions, because we did not value these benefits. Further, we considered only the retirement benefits of OASI, and thus disregarded the pre-retirement survivor benefits. We thus implicitly assumed that the latter have, on the average, a value equal to the OASI contributions accumulated at interest; we believe that this is a reasonably good assumption.

In valuing the retirement benefits as of the date of the Normal Retirement Age, we assumed alternatively that mortality rates in the future remain the same as at present, and that mortality rates decrease according to the assumptions in the intermediate-cost estimates of the 1991 Trustees Report. Further, we used several assumed "real" interest rates (i.e., net of inflation) in valuing the future stream of benefits, so that in this manner we take into account the annual Cost-of-Living-Adjustments. Among the several alternative bases of valuing the benefits, we believe that the most reasonable one is that involving cohort mortality (i.e., decreasing in the future) and 2% interest.

The money's-worth ratio then is the present value of the retirement benefits expressed as a percentage of the accumulated employee contributions. Quite obviously, if it is desired to make the comparison on the basis of the combined employer-employee contributions, the money's worth ratio is merely half of the ratio based on using only the employee contributions.

Finally, let us look at what conclusions may be drawn from our study, using the basis of cohort mortality and 2% interest. The resulting money's-worth ratios for average-wage workers and maximum-wage workers for various years of retirement at the Normal Retirement Age are shown in Table 4 of our study, separately by sex.

As would be expected from the nature of the Social Security program, the money's-worth ratios were relatively high in the early years of the program, because of the underlying philosophy that adequate benefit amounts should be paid from the very beginning. These ratios for the early years of retirement are higher than for the later years, both as to the past and out into the future. Also, for a given year of retirement, the ratios for women are higher than those for men, because of the lower mortality rates of the former. Further, the ratios are higher for average earners than for maximum earners, because of the social-adequacy features of the program, resulting from the weighted benefit formula.

Considering the money's-worth ratios based on the combined employer-employee contributions, they first fell below 100% for maximum earners a few years ago for men (i.e., below 200% when based on the employee contributions alone), and will do so for women in a few years to come. So, in the aggregate, it may be said that, for maximum earners, the time has just come when, on the average, the benefits have been fully "purchased" by the employer-employee taxes. For average earners, this point will come at about the end of the 1990s.

However, when the money's-worth ratios are examined on the basis of the employee contributions alone, under present law they will eventually (in about 35 years) be about 100% for maximum earners, which means that, for these persons, the benefits will have a value of about what the contributions would have purchased on an equitable actuarial basis. For average earners, such money's-worth ratios will, in the aggregate, be about 170% in the eventual situation. In the very long run, under the intermediate-cost estimate, higher contribution rates will be required than are now scheduled in law if the benefit provisions remain unchanged. This means that the long-term money's worth ratios discussed above are probably somewhat higher than what will ultimately be the case, although this will be partially offset by still further increases in longevity.

In summary, it is fair to say that people retiring currently who are maximum earners have just about purchased their benefits with the contributions which they and their employers have paid, so that no windfalls are really present for them. Further, it may be said that, in the long run, the vast majority of persons will receive retirement benefits which will be a fair return for the contributions that they personally have made (i.e., without regard to the employer contributions). However, the relatively few persons who are maximum earners during virtually all of their

working lifetimes might fall a little short of this criterion, but not really excessively so.

PREPARED STATEMENT OF BRUCE D. SCHOBEL

Mr. Chairman and members of the committee: I am Bruce Schobel, Corporate Vice President & Actuary at New York Life Insurance Company in New York City. Before joining New York Life in 1990, I was a consultant on Social Security matters for 2 years. Before that, I spent 9 years at the Social Security Administration in a variety of actuarial and policy-development positions, including staff actuary to the National Commission on Social Security Reform and Senior Advisor for Policy, Office of the Commissioner. I am a Fellow of the Society of Actuaries and the Conference of Consulting Actuaries, a Member of the American Academy of Actuaries, and a Founding Member of the National Academy of Social Insurance.

Bob Myers, my good friend and co-author of "An Updated Money's-Worth Analysis of Social Security Retirement Benefits," has already explained many of the issues that we covered in our paper and the reasons for performing money's-worth analyses in the first place. Also, I understand that the paper itself will be included in the hearing record. Still, a few points should be emphasized.

From the broadest possible perspective, the Social Security program (Old-Age, Survivors, and Disability Insurance, or OASDI) passes the money's-worth "test," because its administrative expenses are less than 1 cent out of every dollar that it collects in taxes. The rest is paid to people as benefits, sooner or later. Thus, the society as a whole gets its money's worth from the program. Of course, some individuals do better than others.

We removed the differences that will always be present within any year-of-birth cohort by analyzing the situation for hypothetical workers with steady earnings histories who survive to normal retirement age in various years. By using this approach, we can see the trend over time in the ratio of present value of Social Security benefits to accumulated Social Security taxes.

We limited the money's-worth analysis in our paper to retirement benefits, excluding survivors and disability benefits because they do not lend themselves to the hypothetical-worker approach that we prefer to use. Clearly, no worker would voluntarily die or become disabled solely to get a high ratio of benefits to taxes. On the other hand, workers plan their retirements and do expect to get a reasonable return on their Social Security retirement contributions.

People who retired many years ago got (and in many cases continue to get) better returns on the average than do current retirees, mostly because Social Security taxes did not start until 1937, and the tax rates increased slowly over many years. Thus, retirees in the program's early years did not pay taxes at today's higher rates for their whole working lives, but their benefits were not reduced in any way for that reason. Similarly, current retirees get better returns than will those in the future, although the differences will not be so large.

This pattern of declining rates of return is inherent in any social insurance program—or private defined-benefit pension plan—that pays significant benefits in its early years. The earliest retirees simply don't have enough time to pay for their benefits with their own contributions, but later retirees do. While declining ratios of benefits to accumulated employee taxes may be unavoidable, policymakers should be sensitive to these ratios dropping much below 100 percent. If that happens, public support for the program can be expected to erode, because many workers could do better investing their taxes on their own.

Our analysis shows that Social Security's money's-worth ratios will reach the critical 100-percent level in about 35 years for workers with lifetime earnings at the maximum amount covered by the program, taking into account employee taxes only and using our "best-estimate" assumptions of 2-percent real interest (after inflation) and declining (so-called "cohort") mortality rates. The corresponding ratios for men who are high earners are already below 100 percent if the employer's matching taxes are also included, and they will drop below 100 percent for high-earning women very soon. (I agree with Bob Myers that one cannot be certain who really bears the burden of the employer taxes; however, many employees believe that they do.) The ratios of the present value of benefits to the accumulated value of the combined employee and employer taxes will continue to decline for many years into the future, reaching 100 percent even for workers with average lifetime earnings within about a decade from now.

AN UPDATED MONEY'S-WORTH ANALYSIS OF SOCIAL SECURITY RETIREMENT BENEFITS

ROBERT J. MYERS AND BRUCE D. SCHOBEL

ABSTRACT

The question is frequently raised: Do workers get their money's worth from the payroll taxes that they pay under the U.S. Social Security program? Analyses by nonactuaries are usually faulty because of incorrect methodology and/or incorrect assumptions. This paper presents an analysis of cash retirement benefits for various cases of workers at two earnings levels who attained age 65 and retired in the past and who will attain the normal retirement age and retire at several dates in the future.

In summary, the vast majority of workers who retired in the past received, and are receiving, benefits of far greater value than the taxes that they paid. This situation will change in the future, especially if tax rates rise to a level sufficient to support the program over the long run. Many workers who retire in the future will not get their money's worth when the combined employer-employee taxes are considered. This result would be expected eventually for a program that is financed almost entirely by these payroll taxes; however, the vast majority of workers will get their money's worth if only the employee tax is considered.

I. INTRODUCTION

A subject that is widely discussed in connection with the Social Security cash-benefits program (Old-Age, Survivors, and Disability Insurance, or OASDI) is whether individuals receive their "money's worth" from the Social Security taxes that they pay. Such a question is easier to ask than to answer precisely because of the many variables and intangibles involved. Nonactuaries frequently analyze this issue inadequately, by using inconsistent assumptions (such as interest rates that are too high relative to assumed earnings growth), ignoring important benefit features, or having incorrect methodology. While perhaps no analysis can provide precise answers to this money's-worth question, a proper analysis can produce approximate ratios that can be used to make valid comparisons among classes of workers retiring at various times.

This paper updates "A Money's-Worth Analysis of Social Security Retirement Benefits," by Myers and Schobel, *TSA* XXXV (1983): 533–45. That paper was based on the law in effect before the very significant Social Security Amendments of 1983 (Public Law 98–21), although the new law was reflected to a large extent in the Authors' Review of Discussion (pp. 555–61). This paper uses essentially the same methodology as the original paper, but it reflects the current law completely and uses the latest economic and demographic assumptions of Social Security's Board of Trustees. The latest assumptions, which were the subject of a review in 1990 by a Technical Panel of Actuaries and Economists appointed by the quadrennial Advisory Council on Social Security, are significantly different from the ones used in 1983.

II. METHODOLOGY

A major element in any money's-worth analysis is whether only the employee taxes or the combined employer-employee taxes should be the basis for comparison between accumulated taxes and the present value of future benefits. Some individuals (including many economists) believe that the latter basis is more appropriate, because they believe that the employer tax is borne entirely by employees through lower wages than would otherwise be paid, although this would not necessarily be the case on an individual-by-individual basis. Others believe, however, that—at least in part—the employer tax is passed on to consumers in general (who, in the aggregate, consist largely of employees and their families) in the form of higher prices. Under these circumstances, one cannot determine whether employees bear the employer tax, either individually or in the aggregate. Still others believe that some portion of the employer tax may be reflected in lower corporate profits, which implies that the stockholders (who also may consist partially of employees, at least through employee pension funds) may bear some of the burden in that way.

For this paper, only the employee tax is used. Obviously, all the results can be adjusted to a combined employer-employee tax basis by multiplying the accumulated tax figures by two, thus halving the ratios of the value of the benefits to the value of the taxes. (In the original money's-worth paper, in 1983, we took the opposite approach, showing ratios based on employer-employee taxes. We have changed our view on which approach is more appropriate, but conversion from one to the other is a trivial calculation in any event.)

Self-employed workers pose a special problem. They pay "payroll" taxes at the combined employer-employee rate but, since 1990 (and in a somewhat different manner in 1984–89), receive income-tax deductions equal to 50 percent of these taxes. In our view, the most appropriate analysis considers only the portion of their tax that represents the employee share and treats the remainder as an employer tax, which is pooled for the benefits of high-cost categories.

Another problem of money's-worth comparisons is the technical one of precisely evaluating the very complex OASDI benefit structure. A proper analysis must consider not only the provisions for computing initial benefits, but also the automatic-adjustment provisions applicable to benefits in payment status. Moreover, the analysis should consider the possible entitlement of other family members to auxiliary or survivor benefits.

To simplify the concepts (and the computations), such comparisons frequently deal only with retirement benefits—as does this paper—and are applicable to individuals who have attained retirement age. The failure to consider disability benefits, survivor benefits payable in the case of death before retirement age, and Hospital Insurance (HI) benefits can be mitigated to a considerable extent by taking into account only the Old-Age and Survivors Insurance (OASI) portion of the total payroll tax, which supports both the OASDI and the HI programs.

This analysis is based on the OASI tax rates scheduled in present law, which actually decline slightly from the current rate, starting in 2000, and remain level thereafter. We recognize, however, that these rates are likely to be inadequate in the very long term. For example, under the intermediate (alternative II) assumptions in the *1991 OASDI Trustees Report*,[1] a higher OASI tax rate will be required some 50 years from now to support the present benefit structure. The effects of higher future tax rates on the money's-worth situation are discussed in general terms. Of course, we cannot predict with any certainty how anticipated future financial difficulties would be resolved, even if the assumptions turn out to be exactly right. The last time that Social Security had major financial problems, in 1983, they were corrected by a combination of tax increases, benefit reductions, and other changes not so easily characterized. A similar combination of changes would be likely to occur in the future as well.

[1] *1991 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds* (House Document No. 102-88), House of Representatives, Washington, D.C., May 17, 1991, pp. 38–44.

The basic procedure used in the money's-worth analysis is to relate (1) the OASI taxes accumulated with interest to the retirement age to (2) the present value of the future benefits measured as of that same time. Nonetheless, comparability is still incomplete, because the value of survivor benefits in the case of death occurring prior to attaining retirement age is thereby implicitly presumed to be the accumulated taxes as of the time of death. Of course, in actual practice the value of these benefits could range from zero, if no surviving spouse or children are left, to a very high figure, if such beneficiaries are present and are young.

We believe that this implicit assumption as to the value of preretirement survivor benefits is reasonably accurate, because *in the aggregate* the taxes and benefits have roughly equal values for any cohort of workers. In any event, because so few workers die before reaching retirement age, these benefits have a relatively small value.[2] (The value of postretirement survivor benefits, as well as spousal benefits, is discussed later.) The use of this simple approach produces reasonably precise and accurate results, while being easy for nonactuaries to understand. Moreover, the hypothetical-worker approach does not lend itself to any other methodology.

Another technical problem is choosing the appropriate interest rates for the preretirement and postretirement periods. In accumulating taxes paid during the preretirement period, we use the yearly average interest rate (nominal, compounded semiannually) payable on new special-issue investments of the Social Security trust funds: an assumed rate of 2.25 percent for 1937–50, the actual experience for 1951–90, and the nominal rates projected for the future under the intermediate assumptions of the *1991 OASDI Trustees Report* for 1991 and after (see Table 1).

The same interest rates could theoretically be used to discount the stream of future benefits as of the retirement date, based on the benefit amounts that were actually payable before 1991 and on the estimated benefit amounts that would be payable after 1991, based on the intermediate assumptions of the *1991 OASDI Trustees Report*. This procedure would directly take into account postretirement increases in Social Security benefits. Such increases were on an *ad hoc* basis before 1975; since then, they have been based on

[2]Under current mortality conditions, 11 percent of male workers die before age 55, by which time relatively few of them still have children who are eligible for Social Security survivor benefits. For those who do have such children, the potential period of benefit receipt is relatively short. The corresponding percentage for women is lower, of course. Also, such percentages will decrease in the future as mortality rates decline.

increases in the Consumer Price Index (CPI).[3] An essentially equivalent procedure, however, is to use a "real" interest rate (relative to the CPI) to compute annuity factors that can be applied to the *initial* benefit amount. We believe that the best interest rate to use in this analysis for obtaining the present value of benefits after retirement, either in the past or in the future, is 2 percent. This is a good approximation of the real interest rate relative to the CPI—and thus implicitly adjusts for benefit increases after retirement. Because the results are sensitive to the real interest rate chosen, figures are also presented for interest rates of 0, 1, and 3 percent. Although 2 percent is an appropriate interest rate generally, in some periods a slightly higher or lower rate might have applied (for example, in 1969–72, the benefit increases far exceeded the increases in the CPI). We do not believe that the use of a constant real rate to discount future benefits introduces any material distortion in the money's-worth results.

The choice of 2 percent as the best (or most appropriate) real interest rate could be questioned. This is approximately the long-term rate that was used for the intermediate (alternative II or II-B) assumptions in the annual Trustees Reports for many years. Several decades ago, some people believed that a 3 percent real rate would be better, but the experience in the 1960s, when the real interest rate was less than 1 percent, caused most analysts to lower their sights. Most recently, in the *1991 OASDI Trustees Report*, the intermediate nominal interest-rate assumption was raised slightly to 6.3 percent, compounded semiannually; when considered along with assumed CPI increases of 4.0 percent annually, this nominal rate represents an effective annual *real* interest rate of 2.31 percent. Obviously, the use of an interest rate higher than 2 percent for obtaining the present value of the benefits results in lower ratios of benefits to taxes.

Another problem is the selection of an appropriate mortality basis for the valuation of the future retirement benefits, especially considering the increases in longevity that have occurred in the past and are likely to occur in the future. The best procedure considers the decreases in mortality rates that occurred or will occur, as the case may be, after the date of retirement, rather than merely the mortality conditions prevailing at the time of retirement. Such "cohort" mortality rates have been developed by the Social Security Administration using the "period" rates derived from the U.S.

[3]More specifically, Social Security regulations require the use of the Consumer Price Index for Urban Wage Earners and Clerical Workers, or CPI-W.

decennial life tables (the latest ones available being those for 1979–81) and from projected future rates developed for the annual Trustees Reports.[4] However, results are also presented on a static-mortality basis.

This analysis focuses on workers retiring at the normal retirement age (NRA), the earliest age at which unreduced retirement benefits can be obtained. Retirement is assumed to occur at the beginning of various years, as follows: 1960, 1970, 1980, 1991, 2002 (the last year in which workers can retire at an NRA of 65), 2009 (the first year in which workers can retire at an NRA of 66), 2020 (the last year in which workers can retire at an NRA of 66), and 2027 (the first year in which workers can retire at an NRA of 67).[5]

This paper also presents a supplementary analysis of the so-called "notch" issue: the significantly different benefit amounts that can be paid to people with essentially the same earnings histories who were born in slightly different years. Specifically, people born in the "notch" years, 1917–21, can receive less than people born earlier. No significant differences occur when retirement occurs at age 62, but for later retirement the "notch babies" can receive as much as $200 per month less than those born earlier (with the same earnings history in each case). In addition, some believe, although erroneously, that the notch babies are treated worse than those born after 1921.

All the hypothetical workers considered in this paper are assumed to have begun working in Social Security-covered employment at age 21 (or 1937, if later) and stopped working at the end of the year before retirement. Two alternative earnings levels are assumed:

1. *Average.* Defined to be earnings equal to the national average wage in every year. The national average wage has been computed and officially

[4]The Office of the Actuary, Social Security Administration, occasionally publishes its mortality studies (see, for example, *Life Tables for the United States: 1900–2050*, Actuarial Study No. 87, September 1982). The mortality rates used in this paper were developed for the *1991 Trustees Report* and are unpublished to date. The authors thank Alice H. Wade for her assistance in providing tables of mortality rates and annuity factors.

[5]For more details on the normal retirement age and how it is scheduled to increase under present law, see Robert J. Myers and Bruce D. Schobel, "Early-Retirement Reduction and Delayed-Retirement Increase Factors under U.S. Social Security Law," *TSA* XLII (1990): 295–320.

promulgated by the Social Security Administration for 1937–90 (although the 1990 figure was not released until after this paper was written).[6] The series was extended forward after 1989 on the basis of the intermediate (alternative II) assumptions in the *1991 OASDI Trustees Report*.

2. *Maximum*. Defined to be earnings equal to the maximum taxable earnings for OASDI purposes[7] in each year, extended beyond 1991 on the basis of the same intermediate assumptions used to project the national average wage.

The average and maximum earnings levels, as well as the OASI tax rates, are shown in Table 1 for each year in the period 1937–2030.

The relationship between the average wage and the OASDI maximum taxable earnings amount is significant, both in the past and in the future, under the provisions of present law. When the program began operations in 1937, the maximum taxable amount was about 270 percent of the average wage. This ratio fell during the 1940s and was only 118 percent in 1950, because the maximum taxable amount, which was specified in the law, was never increased in that period. Beginning with 1951, the maximum amount was raised several times, and its ratio to the average wage fluctuated between 114 percent and 129 percent during 1951–61. The ratio decreased to a low of 103 percent in 1965 and then, in 1966–73, fluctuated between 120 percent and 142 percent. The maximum taxable amount was raised substantially by legislation during the 1970s and became subject to automatic adjustment after 1974. As a result, the ratio of this amount to the average wage rose to about 165 percent during 1974–78 and further each subsequent year, until reaching a level of about 235 percent in 1983–89. In 1990 and after, the ratio is (and will be, under present law) about 240 percent.

The hypothetical workers are assumed to have no periods of unemployment in their lives. Thus, contributions are assumed to be made continuously

[6]Since 1979, this national average wage series has been used to index such program parameters as the maximum taxable earnings amounts for Social Security and Medicare (HI) payroll taxes, the amount of earnings needed to earn a "quarter of coverage," the exempt amounts under the retirement earnings test, and the so-called "bend points" of the benefit formulas. In addition, this series is used to index the actual earnings of workers in computing their average indexed monthly earnings (AIME).

[7]The maximum taxable amount for OASDI purposes in 1991 was $53,400. This needs to be distinguished from the maximum taxable amount for Medicare (HI) payroll taxes, which was $125,000. Before 1991, these amounts were identical. Starting in 1991, they are different, and the difference will continue because both amounts are indexed by changes in the national average wage.

TABLE 1

INTEREST RATE USED TO ACCUMULATE TAXES DURING PRERETIREMENT PERIOD, OASI TAX RATE, AND AVERAGE AND MAXIMUM EARNINGS LEVELS AND OASI TAXES, 1937–2030

Year	Interest Rate	OASI Tax Rate	Average Earner		Maximum Earner	
			Earnings	OASI Tax	Earnings	OASI Tax
1937 ...	2.250%	1.000%	$ 1,150.45	$ 11.50	$ 3,000.00	$ 30.00
1938 ...	2.250	1.000	1,053.23	10.53	3,000.00	30.00
1939 ...	2.250	1.000	1,142.35	11.42	3,000.00	30.00
1940 ...	2.250	1.000	1,195.01	11.95	3,000.00	30.00
1941 ...	2.250	1.000	1,276.03	12.76	3,000.00	30.00
1942 ...	2.250	1.000	1,454.27	14.54	3,000.00	30.00
1943 ...	2.250	1.000	1,713.52	17.14	3,000.00	30.00
1944 ...	2.250	1.000	1,936.32	19.36	3,000.00	30.00
1945 ...	2.250	1.000	2,021.39	20.21	3,000.00	30.00
1946 ...	2.250	1.000	1,891.76	18.92	3,000.00	30.00
1947 ...	2.250	1.000	2,175.32	21.75	3,000.00	30.00
1948 ...	2.250	1.000	2,361.66	23.62	3,000.00	30.00
1949 ...	2.250	1.000	2,483.19	24.83	3,000.00	30.00
1950 ...	2.250	1.500	2,543.95	38.16	3,000.00	45.00
1951 ...	2.188	1.500	2,799.16	41.99	3,600.00	54.00
1952 ...	2.250	1.500	2,973.32	44.60	3,600.00	54.00
1953 ...	2.354	1.500	3,139.44	47.09	3,600.00	54.00
1954 ...	2.302	2.000	3,155.64	63.11	3,600.00	72.00
1955 ...	2.292	2.000	3,301.44	66.03	4,200.00	84.00
1956 ...	2.469	2.000	3,532.36	70.65	4,200.00	84.00
1957 ...	2.500	2.000	3,641.72	72.83	4,200.00	84.00
1958 ...	2.562	2.000	3,673.80	73.48	4,200.00	84.00
1959 ...	2.625	2.250	3,855.80	86.76	4,800.00	108.00
1960 ...	2.917	2.750	4,007.12	110.20	4,800.00	132.00
1961 ...	3.812	2.750	4,086.76	112.39	4,800.00	132.00
1962 ...	3.854	2.875	4,291.40	123.38	4,800.00	138.00
1963 ...	3.906	3.375	4,396.64	148.39	4,800.00	162.00
1964 ...	4.136	3.375	4,576.32	154.45	4,800.00	162.00
1965 ...	4.198	3.375	4,658.72	157.23	4,800.00	162.00
1966 ...	4.948	3.500	4,938.36	172.84	6,600.00	231.00
1967 ...	4.958	3.550	5,213.44	185.08	6,600.00	234.30
1968 ...	5.490	3.325	5,571.76	185.26	7,800.00	259.35
1969 ...	6.594	3.725	5,893.76	219.54	7,800.00	290.55
1970 ...	7.260	3.650	6,186.24	225.80	7,800.00	284.70

TABLE 1—*Continued*

Year	Interest Rate	OASI Tax Rate	Average Earner		Maximum Earner	
			Earnings	OASI Tax	Earnings	OASI Tax
1971 ...	5.979%	4.050%	$ 6,497.08	$ 263.13	$ 7,800.00	$ 315.90
1972 ...	5.927	4.050	7,133.80	288.92	9,000.00	364.50
1973 ...	6.646	4.300	7,580.16	325.95	10,800.00	464.40
1974 ...	7.490	4.375	8,030.76	351.35	13,200.00	577.50
1975 ...	7.396	4.375	8,630.92	377.60	14,100.00	616.88
1976 ...	7.146	4.375	9,226.48	403.66	15,300.00	669.38
1977 ...	7.083	4.375	9,779.44	427.85	16,500.00	721.88
1978 ...	8.198	4.275	10,556.03	451.27	17,700.00	756.68
1979 ...	9.115	4.330	11,479.46	497.06	22,900.00	991.57
1980 ...	11.000	4.520	12,513.46	565.61	25,900.00	1,170.68
1981 ...	13.333	4.700	13,773.10	647.34	29,700.00	1,395.90
1982 ...	12.781	4.575	14,531.34	664.81	32,400.00	1,482.30
1983 ...	11.031	4.775	15,239.24	727.67	35,700.00	1,704.68
1984 ...	12.396	5.200	16,135.07	839.02	37,800.00	1,965.60
1985 ...	10.781	5.200	16,822.51	874.77	39,600.00	2,059.20
1986 ...	7.990	5.200	17,321.82	900.73	42,000.00	2,184.00
1987 ...	8.396	5.200	18,426.51	958.18	43,800.00	2,277.60
1988 ...	8.823	5.530	19,334.04	1,069.17	45,000.00	2,488.50
1989 ...	8.656	5.530	20,099.55	1,111.51	48,000.00	2,654.40
1990 ...	8.625	5.600	21,024.11	1,177.35	51,300.00	2,872.80
1991 ...	8.000	5.600	21,780.69	1,219.72	53,400.00	2,990.40
1992 ...	7.600	5.600	22,925.64	1,283.84	55,500.00	3,124.80
1993 ...	7.200	5.600	24,143.42	1,352.03	57,900.00	3,242.40
1994 ...	6.800	5.600	25,384.98	1,421.56	60,900.00	3,410.40
1995 ...	6.800	5.600	26,737.74	1,497.31	64,200.00	3,595.20
1996 ...	6.700	5.600	28,141.28	1,575.91	67,500.00	3,780.00
1997 ...	6.600	5.600	29,613.54	1,658.36	71,100.00	3,981.60
1998 ...	6.500	5.600	31,147.78	1,744.28	74,700.00	4,183.20
1999 ...	6.500	5.600	32,765.11	1,834.35	78,600.00	4,401.60
2000 ...	6.400	5.490	34,464.16	1,892.08	82,800.00	4,545.72
2001 ...	6.300	5.490	36,221.83	1,988.58	87,000.00	4,776.30
2002 ...	6.300	5.490	38,069.15	2,090.00	91,500.00	5,023.35
2003 ...	6.300	5.490	40,010.67	2,196.59	96,300.00	5,286.87
2004 ...	6.300	5.490	42,051.22	2,308.61	101,100.00	5,550.39
2005 ...	6.300	5.490	44,195.83	2,426.35	106,200.00	5,830.38
2006 ...	6.300	5.490	46,449.82	2,550.09	111,600.00	6,126.84
2007 ...	6.300	5.490	48,818.76	2,680.15	117,300.00	6,439.77
2008 ...	6.300	5.490	51,308.51	2,816.84	123,300.00	6,769.17
2009 ...	6.300	5.490	53,925.25	2,960.50	129,600.00	7,115.04
2010 ...	6.300	5.490	56,675.43	3,111.48	136,200.00	7,477.38

TABLE 1—*Continued*

Year	Interest Rate	OASI Tax Rate	Average Earner		Maximum Earner	
			Earnings	OASI Tax	Earnings	OASI Tax
2011 ...	6.300%	5.490%	$ 59,565.88	$3,270.17	$143,100.00	$ 7,856.19
2012 ...	6.300	5.490	62,603.74	3,436.95	150,300.00	8,251.47
2013 ...	6.300	5.490	65,796.53	3,612.23	158,100.00	8,679.69
2014 ...	6.300	5.490	69,152.16	3,796.45	166,200.00	9,124.38
2015 ...	6.300	5.490	72,678.92	3,990.07	174,600.00	9,585.54
2016 ...	6.300	5.490	76,385.54	4,193.57	183,600.00	10,079.64
2017 ...	6.300	5.490	80,281.20	4,407.44	192,900.00	10,590.21
2018 ...	6.300	5.490	84,375.54	4,632.22	202,800.00	11,133.72
2019 ...	6.300	5.490	88,678.70	4,868.46	213,000.00	11,693.70
2020 ...	6.300	5.490	93,201.31	5,116.75	223,800.00	12,286.62
2021 ...	6.300	5.490	97,954.58	5,377.71	235,200.00	12,912.48
2022 ...	6.300	5.490	102,950.26	5,651.97	247,200.00	13,571.28
2023 ...	6.300	5.490	108,200.72	5,940.22	259,800.00	14,263.02
2024 ...	6.300	5.490	113,718.96	6,243.17	273,000.00	14,987.70
2025 ...	6.300	5.490	119,518.63	6,561.57	286,800.00	15,745.32
2026 ...	6.300	5.490	125,614.08	6,896.21	301,500.00	16,552.35
2027 ...	6.300	5.490	132,020.40	7,247.92	316,800.00	17,392.32
2028 ...	6.300	5.490	138,753.44	7,617.56	333,000.00	18,281.70
2029 ...	6.300	5.490	145,829.86	8,006.06	350,100.00	19,220.49
2030 ...	6.300	5.490	153,267.18	8,414.37	368,100.00	20,208.69

Notes:

1. Interest rates are nominal, compounded semiannually. Figures are actual through 1990, projected thereafter.
2. Tax rates are employee rates only. Figures are actual through 1991, scheduled in law thereafter.
3. Average earnings amounts are actual through 1989, projected thereafter.
4. Maximum earnings amounts are actual through 1991, projected thereafter.
5. All projections are based on the intermediate (alternative II) assumptions of the *1991 OASDI Trustees Report* (footnote 1).

in every year. If periods of unemployment were assumed, these would reduce the accumulated taxes, but not necessarily the benefits payable, because the dropout-years provision of the Social Security benefit computation has a much greater effect for fluctuating earnings history than for a steady one.

Because of the assumption of no unemployment and for other reasons, the two hypothetical earnings patterns used are really not "typical." The relative earnings levels of workers tend to vary over their lifetimes, with earnings usually being below average in the early working years, being above average in the middle years, and declining somewhat in later years. These patterns often reflect service increases, promotions, and so on.

If a typical average-earnings pattern could be developed, including periods of unemployment and a more usual trend of earnings, the money's-worth analysis would not be very different from that shown here for steady average

earners. The present value of benefits would be slightly higher, because of the dropout-years provision, which would eliminate years with significant unemployment and the early years with low earnings; while the accumulated value of taxes paid would be somewhat lower, because of unemployment and because relatively larger tax payments would be made in later years, when the effects of interest would be less. The overall effect might be an increase in the benefits/taxes ratios of about 10–20 percent relatively.

The steady maximum earner was once common but is becoming less so. Because of the many ad hoc increases in the maximum taxable amount that occurred in 1972–81, few workers in their 20s and early 30s today are able to earn the maximum, although this was not so uncommon in the past. Thus, the lifetime maximum earner will not often occur in the future. A typical future maximum earner might not reach maximum earnings until perhaps age 30. Because such a worker would still have time to earn the maximum amount for the 35 years that are needed for maximum benefits, the effect on the present value of retirement benefits would be insignificant, but the accumulated value of taxes would be somewhat lower. Therefore, the ratio of the value of the benefits to the value of the taxes would be higher than those shown in this analysis, by perhaps 5–10 percent relatively.

Results are shown separately for men and women. No computations were made for the case of a married couple, because most people retiring currently receive benefits on their own earnings records, with perhaps residual spouse benefits, rather than solely on the earnings records of their spouses. This will be even more true in the future, because of greater labor-force participation by women. Thus, in a very large proportion of cases, both husband and wife will have benefits based on their own earnings records and will not receive spouse benefits at all, or else one spouse will receive a small residual benefit.

However, in past years and even to a considerable extent for those retiring currently, spousal auxiliary and survivor benefits have had considerable value. For example, considering a couple of the same age, with the man being the only earner, the value of the wife's benefits is 85–90 percent of the value of the husband's retired-worker benefits. Under these circumstances, the ratios of the present value of benefits to the accumulated taxes for retirement cases would be almost twice as large, thus further enlarging the "bargain" nature of the benefit protection provided for those who retired in the program's early decades of operation.

These hypothetical workers are assumed to have no children eligible for benefits. This assumption, which was made to simplify the calculations,

does not distort the results. The Office of the Actuary, Social Security Administration, estimates that, over the long run, benefits to children of retired workers will represent only about 1 percent of the total cost of retirement benefits. Therefore, the ratios of benefits to taxes would be only slightly affected if eligible children were assumed to be present.

Figures are shown for retirement at the NRA only (except for two cases in the supplementary "notch" analysis). The ratios of the present value of future benefits to the accumulated taxes would not be very much different for retirement at ages between 62 and the NRA, because the early-retirement reduction factors are close to being "actuarial,"[8] and the amount of taxes not paid in the several years before the NRA would be counterbalanced, in part, by the lower benefits resulting from not having earnings in those years. (The earnings assumed to occur in those years are somewhat higher than those in the previous years and thus produce a larger benefit.) On balance, the ratios of benefits to taxes for retirement at ages between 62 and the NRA would be slightly higher than those for retirement at the NRA.

On the other hand, for those reaching the NRA before 2009, the ratios would be significantly lower for retirement at ages after the NRA, because the delayed-retirement increases are less than the actuarial equivalent, and the additional taxes paid would more than counterbalance the effect of the increase in the benefit resulting from the higher additional earnings. For those reaching the NRA in 2009 and after, the delayed-retirement increase is 8 percent per year of delay (until age 70), which is approximately the acturial-equivalent factor.

As noted earlier, as to economic assumptions, the future wage and CPI increases are those used for the intermediate (alternative II) assumptions of the *1991 OASDI Trustees Report*. No changes in the law as it was at the end of 1991 are assumed to occur, even though this assumption is probably not valid for the tax rates if the benefit structure remains unchanged. Based on such intermediate assumptions, higher tax rates will be necessary by 2040 at the latest if the program is to continue to be self-supporting.

[8]For more information about the adjustment of Social Security benefits, see the Myers and Schobel paper (footnote 5).

No consideration is given in this analysis to the income taxation of OASDI benefits. Since 1984, relatively high-income beneficiaries[9] have been required to include in their taxable incomes up to one-half of their OASDI benefits. At current tax rates, this can result in an effective benefit reduction of about 16 percent. We believe that this income taxation is not an appropriate element in a Social Security money's-worth analysis, because it depends on a number of factors outside the scope of Social Security. Moreover, including its effects would require estimating future income-tax rates, which are considerably more volatile and unpredictable than payroll-tax rates. Only about 15 percent of beneficiaries currently pay any income taxes on their benefits; this proportion is expected to rise to about 40 percent ultimately if no changes in the laws are made.[10] One obvious change that could occur is indexing of the earnings thresholds, which have remained unchanged since 1984. If this occurs, then the proportion of beneficiaries paying income taxes on their benefits will not rise very much.

Digressing a moment, we would like to point out that some readers may be aware of another money's-worth analysis (which we believe involves faulty methodology). The Congressional Research Service (part of the Library of Congress) recently prepared such an analysis of Social Security retirement benefits.[11] The approach taken was to reduce the combined OASDI-HI tax rate by deducting (1) the HI rate, (2) the DI rate, and (3) the estimated portion of the OASI rate that finances survivor benefits. The remainder—the portion of the OASI rate that finances retirement benefits—was then applied to the assumed earnings history and accumulated at interest to the retirement age. The accumulated tax amount was then compared to the value of projected future benefits.

[9]The earnings thresholds are $25,000 for single individuals and heads of households, $32,000 for married couples filing joint returns, and $0 for married persons filing separate returns if they lived with their spouses at any time during the year. At present, many individuals with maximum Social Security-covered earnings have no income-tax liability attributable to their OASDI benefits. On the other hand, some individuals with relatively small OASDI benefits must pay income taxes on them because of substantial other income, which may include their own earnings or those of a spouse.

[10]At first glance, one might expect even those with small OASDI benefits to pay taxes on them eventually, because the earnings thresholds in the law are not indexed. In fact, this will not occur, because the personal exemption and standard deductions (including the additional standard deductions for those age 65 and over) in the income tax law are indexed by changes in the CPI.

[11]See *1991 Green Book—Background Material and Data on Programs Within the Jurisdiction of the Committee on Ways and Means* (WMCP 102-9), House of Representatives, Washington, D.C., May 7, 1991, pp. 1120–31.

The significant error in this methodology is that the taxes should have been accumulated to retirement age using *both* interest and mortality (survival rates). Otherwise, the analysis implicitly assumes a preretirement death benefit equal to taxes plus accumulated interest. Use of the proper procedure would have resulted in larger accumulations of taxes at retirement and lower ratios of benefits to taxes.

A "perfect" money's-worth analysis would consider all members of a cohort, rather than just the hypothetical cases considered here. For example, to analyze the situations of workers retiring at age 65 in 2000, one could theoretically consider all persons born in 1935 and compare all the taxes paid by those persons (including appropriate interest) with the present value of all the benefits that they (and their family members) actually receive. Such an analysis would show precisely the declining rate of return for succeeding cohorts and even the relative proportions of "winners" and "losers." Unfortunately, the Social Security Administration does not collect the required data, not even on a sample basis; therefore, such an analysis would seem to be impossible.

III. RESULTS AND INTERPRETATION

A. "Most Reasonable" Basis

This paper focuses on figures based on what we consider the "most reasonable" assumptions, namely, cohort mortality and a 2 percent "real" interest rate after retirement. The tables, however, show a broader range of results, using interest rates of 0, 1, 2, and 3 percent and both static and cohort mortality, for men and women separately.

Table 2 shows certain figures that do not vary according to postretirement interest and mortality: the employee OASI taxes accumulated at interest to NRA and the initial monthly benefit amount payable then (to a single worker), for average earners and maximum earners. Table 3 shows the present value of future benefits as of NRA, based on the assumptions described previously. Table 4 shows the ratios of the present value of benefits to the accumulated taxes.

For single average-earning men, the ratio of the present value of retirement benefits to the accumulated value of taxes was 1,417 percent for the 1960 case. In other words, the value of the benefits was 14 times the value of the employee taxes. This ratio steadily decreased to 232 percent for the 1991 case and is expected to decrease further, until it stabilizes at about 155 percent for those retiring in 2009 and later. The corresponding ratios for

TABLE 2

DESCRIPTION OF HYPOTHETICAL WORKERS, ACCUMULATED OASI TAXES AT NRA, AND INITIAL MONTHLY BENEFIT AMOUNTS

Year of Birth	Normal Retirement Age	Year of Attaining NRA	Accumulated OASI Taxes at NRA		Initial Monthly Benefit Amount			
					Average Earner		Maximum Earner	
			Average Earner	Maximum Earner	Men	Women	Men	Women
1895	65	1960	$ 987	$ 1,378	$ 105.00	$ 105.00	$ 118.10	$ 118.10
1905	65	1970	3,510	4,520	168.40	173.90	189.80	196.40
1915	65	1980	12,251	17,129	450.90	450.90	572.00	572.00
1926	65	1991	50,542	83,361	751.10	751.10	1,022.90	1,022.90
1937	65	2002	118,661	219,777	1,257.50	1,257.50	1,850.00	1,850.00
1943	66	2009	184,881	367,559	1,776.50	1,776.50	2,736.40	2,736.40
1954	66	2020	326,517	740,894	3,071.10	3,071.10	4,874.80	4,874.80
1960	67	2027	444,655	1,098,515	4,334.50	4,334.50	6,872.30	6,872.30

Note: Initial benefit amounts are before deduction of monthly premiums for Medicare Part B (Supplementary Medical Insurance) and rounding down to whole dollars, where applicable. Medicare was available beginning in 1966, and the dollar-rounding rule was first applied in 1982.

TABLE 3

PRESENT VALUE OF RETIREMENT BENEFITS USING VARIOUS INTEREST RATES AND MORTALITY BASES

	Year of Retirement at NRA							
	1960	1970	1980	1991	2002	2009	2020	2027
Average Earner								
Cohort Mortality								
0% Men	$16,637	$28,002	$ 80,298	$142,594	$247,451	$340,662	$605,673	$ 831,882
Women	21,912	38,779	103,648	178,794	306,275	422,547	748,777	1,032,116
1% Men	15,213	25,512	72,874	128,991	223,275	308,010	[illegible]28	751,947
Women	19,676	34,658	92,377	158,863	271,456	375,364	66[illegible]510	916,696
2% Men	13,986	23,376	66,531	117,409	202,760	280,228	496,001	683,981
Women	17,788	31,198	82,948	142,257	242,545	336,066	592,737	820,606
3% Men	12,922	21,531	61,075	107,478	185,226	256,424	453,012	625,777
Women	16,184	28,270	74,999	128,306	218,335	303,068	533,492	739,948
Static Mortality								
0% Men	16,215	26,458	75,743	137,978	239,986	330,334	587,533	807,686
Women	19,968	35,622	99,084	171,177	295,863	408,179	723,555	998,078
1% Men	14,881	24,246	69,113	125,241	217,312	299,749	531,896	732,629
Women	18,120	32,125	88,801	152,924	263,454	364,251	644,110	890,409
2% Men	13,722	22,331	63,404	114,340	197,960	273,575	484,437	668,439
Women	16,535	29,152	80,128	137,590	236,346	327,405	577,694	800,138
3% Men	12,711	20,662	58,456	104,947	181,333	251,024	443,670	613,184
Women	15,167	26,607	72,749	124,615	213,497	296,263	521,736	723,886
Maximum Earner								
Cohort Mortality								
0% Men	$18,712	$31,560	$101,863	$194,194	$364,043	$524,733	$ 961,392	$1,318,940
Women	24,646	43,796	131,485	243,494	450,583	650,863	1,188,544	1,636,407
1% Men	17,111	28,755	92,447	175,669	328,476	474,437	867,194	1,192,204
Women	22,130	39,142	117,187	216,351	399,359	578,185	1,053,199	1,453,412
2% Men	15,731	26,347	84,400	159,896	298,295	431,644	787,309	1,084,443
Women	20,008	35,234	105,226	193,735	356,826	517,654	940,860	1,301,061
3% Men	14,534	24,267	77,478	146,371	272,499	394,979	719,072	992,162
Women	18,203	31,928	95,141	174,736	321,208	466,825	846,819	1,173,179
Static Mortality								
0% Men	18,239	29,820	96,086	187,908	353,061	508,824	932,600	1,280,576
Women	22,460	40,230	125,695	233,121	435,265	628,731	1,148,509	1,582,441
1% Men	16,737	27,327	87,675	170,562	319,703	461,713	844,286	1,161,575
Women	20,380	36,281	112,651	208,262	387,586	561,067	1,022,405	1,411,733
2% Men	15,434	25,168	80,433	155,716	291,234	421,396	768,953	1,059,802
Women	18,597	32,924	101,648	187,380	347,706	504,312	916,981	1,268,610
3% Men	14,297	23,288	74,156	142,924	266,771	386,661	704,243	972,197
Women	17,059	30,050	92,300	169,709	314,091	456,344	828,158	1,147,713

TABLE 4

RATIO OF PRESENT VALUE OF RETIREMENT BENEFITS TO ACCUMULATED VALUE OF OASI TAXES

	Year of Retirement at NRA							
	1960	1970	1980	1991	2002	2009	2020	2027
Average Earner								
Cohort Mortality								
0% Men	1,686%	798%	655%	282%	209%	184%	185%	187%
Women	2,220	1,105	846	354	258	229	229	232
1% Men	1,541	727	595	255	188	167	167	170
Women	1,993	987	754	314	229	203	203	206
2% Men	1,417	666	543	232	171	152	152	154
Women	1,802	889	677	281	204	182	182	185
3% Men	1,309	613	499	213	156	139	139	141
Women	1,640	805	612	254	184	164	163	166
Static Mortality								
0% Men	1,643	754	618	273	202	179	180	182
Women	2,023	1,015	809	339	249	221	222	224
1% Men	1,508	691	564	248	183	162	163	165
Women	1,836	915	725	303	222	197	197	200
2% Men	1,390	636	518	226	167	148	148	150
Women	1,675	831	654	272	199	177	177	180
3% Men	1,288	589	477	208	153	136	136	138
Women	1,537	758	594	247	180	160	160	163
Maximum Earner								
Cohort Mortality								
0% Men	1,358%	698%	595%	233%	166%	143%	130%	120%
Women	1,788	969	768	292	205	177	160	149
1% Men	1,241	636	540	211	149	129	117	109
Women	1,605	866	684	260	182	157	142	132
2% Men	1,141	583	493	192	136	117	106	99
Women	1,452	780	614	232	162	141	127	118
3% Men	1,054	537	452	176	124	107	97	90
Women	1,321	706	555	210	146	127	114	107
Static Mortality								
0% Men	1,323	660	561	225	161	138	126	117
Women	1,629	890	734	280	198	171	155	144
1% Men	1,214	605	512	205	145	126	114	106
Women	1,479	803	658	250	176	153	138	129
2% Men	1,120	557	470	187	133	115	104	96
Women	1,349	728	593	225	158	137	124	115
3% Men	1,037	515	433	171	121	105	95	89
Women	1,238	665	539	204	143	124	112	104

single average-earning women are about 20 percent higher relatively than those for men; this is due almost entirely to the greater longevity of women.[12]

As noted earlier, the foregoing analysis is based on the tax rates scheduled in present law. Based on the intermediate (alternative II) assumptions in the *1991 OASDI Trustees Report*, these scheduled rates are not quite adequate in the long term. If the program is to be financed on the pay-as-you-go (or current-cost) basis completely through payroll taxes, then, based on the intermediate assumptions, the ultimate combined employer-employee OASI tax rate (for 2065 and later) would be about 15 percent.[13] On this basis, the ultimate benefits/taxes ratios for average earners would be about 115 percent for single men and 135 percent for single women.

The benefits/taxes ratios for maximum-earning workers are significantly lower than those for average-earning workers. This result reflects the weighted nature of the OASDI benefit formula, which favors lower-paid individuals over higher-paid ones. Nonetheless, the benefits/taxes ratios have been well above 100 percent for all maximum-earning retirees in the past, being 192 percent for single men retiring in 1991, as compared to 232 percent for the average-wage case. (The difference would have been larger except that, in 1951–73, the maximum taxable amount was not much higher than the average wage, as mentioned previously.)

The ratios for maximum earners decrease significantly in the future and approach the 100 percent break-even point by 2027 for single men. Moreover, if future tax rates are increased to an adequate level, these ratios would fall below 100 percent. Ultimately, the ratios would be 73 percent for single men and 86 percent for single women. Thus, if one considers only the employee taxes paid, the maximum earners who retired in the past have easily received their money's worth, even ignoring the possibility of auxiliary and survivor benefits for spouses and children. In the very long run, however, if tax rates are increased to a level sufficient to finance the scheduled benefits, based on the intermediate (alternative II) assumptions of the *1991 OASDI Trustees Report*, then maximum-earning single workers will not receive benefits equal to the value of their accumulated taxes.

[12]The only exception shown is the case of workers attaining age 65 and retiring in 1970. For workers born in 1897–1912 (a period that includes 1905, the year of birth for the workers in this example), women had their average earnings computed over a shorter period than did men born in the same year. Thus, women received slightly larger benefits than did men with identical earnings.

[13]See *1991 OASDI Trustees Report* (footnote 1), Table 26, pp. 77–78.

If one considers the combined employer-employee taxes (halving the ratios of benefits to taxes shown in the tables), until about now the value of the benefits has exceeded the accumulated taxes for maximum earners. For men now and for women in about five years, the situation is reversed. This is not surprising in a program that is intended to be self-supporting primarily from payroll taxes, because not everybody can receive benefits worth more than the combined employer-employee taxes. In essence—and quite properly, in our opinion—the employer tax can be viewed as being used for the benefit of the lower-paid persons and those near retirement age when the system began (or when coverage was extended to them).

B. Static Mortality

The preceding analysis was based on mortality rates after retirement that decline, as actually occurred in the past, where applicable, and as projected to occur in the future, using the intermediate (alternative II) assumptions in the *1991 OASDI Trustees Report*. Alternatively, we have also computed ratios based on static mortality. In other words, workers retiring in any particular year are assumed to experience, in all future years thereafter (whether prior to the present time or after it), the mortality rates that occurred or are assumed to occur in that year of retirement.

On the whole, the use of static mortality reduces the present value of the benefits by about 2–3 percent relative to the use of cohort mortality. The ratio of the present value of benefits to accumulated taxes is reduced correspondingly.

C. Various Postretirement Interest Rates

As noted previously, we believe that the most reasonable postretirement real interest rate is 2 percent; however, we also computed benefits/taxes ratios using real interest rates of 0, 1, and 3 percent. As would be expected, these ratios increase as the interest rate declines, by about 10 percent relatively for each 1 percent decrease in the interest rate.

Using an interest rate of 3 percent, for single maximum-earning men, with the currently scheduled tax rates, the money's-worth test based on employee taxes alone is not met beginning with retirements in the mid-2010s. In all cases, for interest rates of 0 and 1 percent, the test is met.

D. Payback Periods

Table 5 shows the number of months required for the aggregate retirement benefits to exceed the employee OASI taxes accumulated at interest to NRA for each of the cases described previously. These figures do not reflect (1) any interest earnings on the accumulated taxes after retirement, (2) any cost-of-living increases in monthly benefits, or (3) mortality of the beneficiaries. For 1991 retirees, the "payback period" for single average earners is 68 months, while for maximum earners it is 82 months. Ultimately, this period will be about 8½ years for single average earners and about 13½ years for single maximum earners.

TABLE 5

NUMBER OF MONTHS REQUIRED TO RECOVER ACCUMULATED OASI TAXES

Year of Retirement at NRA	Average Earner		Maximum Earner	
	Men	Women	Men	Women
1960	10	10	12	12
1970	21	21	24	24
1980	28	28	30	30
1991	68	68	82	82
2002	95	95	119	119
2009	105	105	135	135
2020	107	107	152	152
2027	103	103	160	160

Note: Assumes no postretirement interest on accumulated taxes and no cost-of-living adjustments in benefits.

E. Money's-Worth and the "Notch"

Table 6 shows money's-worth results for three pairs of closely adjacent individuals who are just in and just out of the so-called "notch-baby" cohorts (births in 1917–21).

The first pair is workers retiring at age 62 who are (1) born in December 1916, just before the "notch-baby" cohort, and (2) born in January 1917,[14] at the beginning of the cohort. As can be seen from both the initial monthly benefits payable and the present values of the benefits, no really significant difference is present between these two cases.

[14]Special rules apply to people born on January 1. Those special cases are not considered in this paper.

TABLE 6

ANALYSIS OF SO-CALLED "NOTCH" SITUATION

	Pair 1		Pair 2		Pair 3	
Month of Birth	Dec. 1916	Jan. 1917	Dec. 1916	Jan. 1917	Dec. 1921	Jan. 1922
Month of Retirement	Jan. 1979	Jan. 1979	Jan. 1982	Jan. 1982	Jan. 1987	Jan. 1987
Retirement Age	62:1	62:0	65:1	65:0	65:1	65:0
Accumulated OASI Taxes at Retirement						
Average Earner	$10,675	$10,675	$16,806	$16,806	$33,149	$33,149
Maximum Earner	14,574	14,574	24,384	24,384	51,962	51,962
Initial Monthly Benefit Amounts						
Average Earner	$312.80	$306.50	$623.70	$535.40	$589.10	$593.50
Maximum Earner	395.70	388.90	789.90	679.30	785.20	789.20
Present Value of Retirement Benefits						
Average Earner						
Cohort Mortality						
2% Men	$51,510	$50,472	$ 93,210	$ 80,014	$ 90,490	$ 91,165
Women	63,276	62,002	115,368	99,035	110,534	111,360
Maximum Earner						
Cohort Mortality						
2% Men	$65,161	$64,041	$118,048	$101,519	$120,612	$121,226
Women	80,046	78,670	146,110	125,652	147,329	148,079
Ratio of Present Value of Retirement Benefits to Accumulated Value of OASI Taxes						
Average Earner						
Cohort Mortality						
2% Men	483%	473%	555%	476%	273%	275%
Women	593	581	686	589	333	336
Maximum Earner						
Cohort Mortality						
2% Men	447%	439%	484%	416%	232%	233%
Women	549	540	599	515	284	285

The second pair is the same workers, except that they retire at age 65. For these workers, a significant difference is evident. For the single average-earning men, the present value of the retirement benefits is $13,196 (or 16 percent) higher for the 1916 year-of-birth case as compared to the person born in 1917 (possibly as little as 2 days later). However, the latter worker is really not treated unfairly, because the present value of his benefits is $63,208 (or 376 percent) higher than his accumulated employee taxes—quite an "actuarial bargain"!

For the corresponding maximum-earning men, the excess of the present value of benefits for the 1916 case over that for the 1917 case is $16,529 (or 16 percent), but nonetheless the latter is receiving benefits with a present value that is $77,135 (or 316 percent) more than the accumulated value of his taxes. Thus, the "notch baby" (the 1917 case) is not being treated unfairly, but rather the "bonanza baby" (the 1916 case) is getting a windfall.

The last pair is workers retiring at age 65 who are (1) born in December 1921, at the end of the "notch-baby" cohort, and (2) born in January 1922, at the beginning of the post-notch cohort. Once again, as can be seen from both the initial monthly benefits payable and the present values of the benefits, no significant difference is present between these two cases. This is true despite what some "notch-baby" advocates assert—that their cohort is worse off than those born after them.

F. Money's Worth and the Medicare Program

The foregoing analysis and discussion have related solely to the Social Security cash-benefits program (OASDI), although primarily to the retirement benefits portion. How does the money's-worth concept apply to the Medicare program?

Applying the money's-worth concept to the Medicare program is difficult, because its two parts—Hospital Insurance (HI) and Supplementary Medical Insurance (SMI)—are financed in very different ways. Also, future projection of Medicare costs—and especially of how they are distributed among various categories of persons—is more uncertain than projections of cash benefits.

For HI benefits, which are financed almost entirely by payroll taxes, exactly the same benefit protection is provided regardless of earnings and, thus, regardless of taxes paid (although not the same benefits for each individual, of course). Because HI taxes have been payable only since 1966, clearly those who retired in the past have received far more in present value

of HI benefits than the accumulated HI employee taxes paid. For example, such accumulated taxes for a maximum earner retiring at age 65 at the beginning of 1991 amounted to $15,434. If this amount is annuitized at 2 percent interest and male cohort mortality, it results in an initial annual payment of $1,185 (actually, a lower interest rate, yielding a smaller initial payment, would be justified because hospital costs have risen more rapidly than the CPI). This is only 60 percent of the average per-capita cost of the HI program in 1990: $1,990 (benefit outgo of $66.2 billion divided by 33.2 million average monthly number of beneficiaries). Thus, all current beneficiaries have received far more than their money's worth from their HI employee taxes.

This situation will gradually change in the future as workers pay HI taxes over their entire working careers. This is especially so for high earners, because beginning in 1991, the maximum taxable amount for HI was "decoupled" from the OASDI amount and was made 134 percent higher ($125,000 versus $53,400). This relationship will continue in the future under the automatic-adjustment provisions applicable to both maximum amounts. By the same reasoning, the HI maximum amount will always be about 5.6 times the national average wage.

For SMI benefits, which are financed by enrollee premiums and payments from the general fund of the Treasury, the money's-worth situation is quite clear. For all enrollees, the premium structure is the same ($29.90 per month in 1991 for those who enroll when first eligible), and it pays 25 percent of the average cost of the program for the aged (those 65 and older). Thus, all enrollees—both low-income and high-income—receive far more than their money's worth, even if the situation is looked at on a term-insurance approach, under which the annual cost for an enrollee aged 65 is only about half of that for enrollees at, say, age 85 and over. Of course, the general-fund contribution, which pays the remaining 75 percent of the cost, is paid by the public as well, but its incidence cannot be determined with any precision.

IV. CONCLUSIONS

This analysis clearly shows that, on the average, workers who retired in the past have received benefits of far greater value than the accumulated employee taxes paid and likewise even more than the accumulated employer-employee taxes. Furthermore, this situation will continue in the near future. For each succeeding cohort of retirees, however, the ratio of the present value of future retirement benefits to the accumulated OASI employee taxes

will decrease toward 100 percent. Over the long run, as shown in Table 4, this situation will eventually reach the point at which the maximum earner cannot expect to receive more in benefits than was "paid for" in taxes—not even with the inadequate tax rates scheduled in present law.

If the payroll-tax rates are increased in the long term to a sufficiently high level so that the program is again self-supporting, then the failure to receive one's money's worth will apply to a small extent for the maximum earner, but not for the average earner.

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This pamphlet contains uncorrected page proofs of the papers listed below, which are to appear in Volume XLIV of the *Transactions*.

Written discussion of a paper will be accepted for publication in the *Transactions* if submitted no later than January 4, 1993. The discussion should be typed double-spaced, using only one side of each sheet of paper. The discussion should be brief, relative to the length of the article, and professional in tone. One copy of the discussion should be sent to the author of the paper and two copies to Barbara A. Simmons, Technical Editor, Society of Actuaries, 475 N. Martingale Road, Schaumburg, Illinois 60173.

Papers are not necessarily discussed at Society meetings, and members should consult the program announcements for information on which papers, if any, will be discussed at a particular meeting.

page

1 A SIMPLE MONTE CARLO APPROACH TO BAYESIAN GRADUATION, Bradley P. Carlin

23 PARAMETRIC MODELS FOR LIFE TABLES, Jacques F. Carriere

47 AN UPDATED MONEY'S-WORTH ANALYSIS OF SOCIAL SECURITY BENEFITS, Robert J. Myers and Bruce D. Schobel

71 REVERSE MORTGAGES, William A. Phillips and Stephen B. Gwin

107 AN ACTUARIAL ANALYSIS OF THE AIDS EPIDEMIC AS IT AFFECTS HETEROSEXUALS, Peter W. Plumley

Discussions of these papers should be submitted no later than January 4, 1993.

October 1, 1992
Preprint 2

PREPARED STATEMENT OF JOHN B. SHOVEN

I would like to begin by congratulating the Senate Finance Committee for holding this session regarding the rates of return offered by the Social Security system to people of different generations and with different income levels. The Social Security system is incredibly important to almost all American workers. For the majority of them, their Social Security taxes exceed their federal personal income taxes. When they retire, Social Security will be by far their largest financial asset for the vast majority of Americans. Social Security benefits form the foundation of their economic security in retirement. Therefore, American workers need the system to be monitored closely and have the right to expect timely information about it and attention to be paid to its shortcomings.

The focus of this particular session is the recent paper by Robert Myers and Bruce Schobel on the rates of return that different individuals have experienced (or can anticipate experiencing) on the retirement portion of their Social Security contributions. Let me begin with some direct comments about their study. First, I think that it is fair to say that almost all economists, if faced with the choice of attributing both the employer and the employee contributions to the worker or just the employee contributions, would choose the former. It just doesn't make any difference whether the money is shown on your check stub and deducted before you are paid (which is how the employee half of total contributions is typically treated) or whether it doesn't show up as gross income on the check at all (which is how the employer contribution is treated). It is completely arbitrary to think that the worker only bears the burden of the half that shows up as a payroll deduction.

If you think that the worker bears all of payments to Social Security made on their behalf, then you must halve the numbers in Table 4 of Myers and Schobel. Notice that this adjustment alone means that high earning single men who retire today at age 65 cannot expect to get the present value of their taxes back. Using the authors' favorite real discount rate of 2 percent, the maximum earner single male can expect benefits which amount to roughly 90 percent of their tax payments. For future high earners the average rate of return will be much worse. For men retiring 35 years from now, the expected return ratio will be less than 50 percent; that is they can expect to get less than half their money back in present value terms. At that time, they only get 60 percent of their money back even at a zero percent interest rate. Note that the situation, while better, isn't all that good for the average earner in the future either. Using a two percent real interest rate, average earners (both single men and single women) cannot expect to get their money back from Social Security if they retire more than about 10 years from now. Let me just say that I have done some similar calculations with Professors Michael Boskin, Larry Kotlikoff, and Douglas Puffert (1987) and, while we have some methodological differences, our results are generally consistent with these findings of Myers and Schobel. Social Security was a good deal for almost everyone who is retired today; it is not going to be a particularly good deal for many people who retire in the future.

Another point that should be made is that the two percent real interest rate that Myers and Schobel use to discount retirement benefits is very low. That is approximately the average real rate of interest on long term government bonds, but it is significantly lower than the average return on capital in the economy or the long term average real return on the stock market (which are in the seven to eight percent range). I have done some work which finds that diversified stock market investments have always offered a higher return than bonds over long term horizons, so it is not quite accurate to say that stock market investments are riskier over such horizons. I only bring this up to emphasize that two percent is a very low standard to hold a pension system to. Therefore it is quite disturbing that Social Security will not be offering that level of return in the future for single individuals.

Sometimes Social Security is characterized as a mandatory government operated pension plan. With this image, one can think of Social Security contributions or taxes as deferred income. They aren't taxes at all, only compensation that the worker receives later in retirement. The Myers-Schobel article, linking the present value of benefits and taxes makes most sense with this model of how Social Security functions. However, at other times academic economists treat Social Security as consisting of a tax system and a transfer system. In this view, the link between what one gets out of the system and what one pays into it is so weak that it is best to act as if there is no connection whatsoever. The contributions are really taxes, money that the government takes out of your compensation with no additional payback in the future. Which of these views is more accurate? Clearly the truth lies somewhere in between, but unfortunately, in my opinion, the tax and transfer model is more accurate for most Americans.

The Myers and Schobel paper calculates the relationship between average benefits that a person can expect to receive and the taxes paid into the system. To settle the choice between these two models, however, one would want to look at the marginal linkage between payins and payouts. That is, if someone earns more money and pays more into the system, what is the relationship between the present value of extra benefits that she will enjoy in retirement to the extra taxes that she pays now? The answer to this question is not the 90 cents on the dollar or even 50 cents on the dollar that Myers and Schobel predict for the average linkage in the future. Rather for many people it is zero cents on the dollar, or 15 cents, or in some cases 35 cents. The zero connection occurs for people with very long careers (over 35 years) or very short careers (less than 10 years) or whose spouse has a much higher earnings history than their own. These zero and low linkages mean that the Social Security tax rate has to be added to the personal income tax rates in determining how much taxes are distorting the efficiency of the economy. Professors Boskin, Kotlikoff and I (1988) once suggested a sweeping reform of Social Security which would greatly tighten the marginal links between taxes and benefits while still preserving the basic redistributionary nature of the system. While such a broad reform is probably not it the political cards at this time, some features of it could be easily and desirably adopted.

A major shortcoming of Social Security, in my opinion, is that it does not keep its participants well informed as to what their situation is in the system. A private defined contribution system would send all participants a statement of their financial position in the plan at least once per year. There is no reason that Social Security should do less. It is my view that we save far too little for the future both individually and as a country. The government could use this annual mailing of Social Security statements to educate and inform people about their likely Social Security benefits and the need for additional saving in order to p vide adequate resources for a comfortable retirement. All private financial services institutions use their periodic statement mailings as an opportunity to promote their products. The government should follow suit and institute annual Social Security statement mailings which also include material promoting saving.

Let me summarize with a few points. Social Security is not going broke. It is financially secure for the next forty years or more and the necessary adjustments will be made to keep it financially secure for a much longer horizon than that. However, the rate of return offered by Social Security to successive cohorts of participants has been and is falling. It is no longer true that new retirees can expect benefits which vastly exceed the taxes that they have paid into the system. In fact, single men are already in a situation where they won't on average get their money back using a two percent real interest rate to present value future benefits. The rate of return situation will with certainty get worse for future cohorts of workers and retirees. Some can be done about this, but perhaps not much. It is a product of our demographic structure and our slow rate of growth of productivity. To be fair, it is also a product of a system which is strongly redistributionary and also extraordinarily complex. What can be done and what should be done is to inform the system's participants about their benefits and the necessity for additional saving either in a private pension system or outside of one. If I can influence policy a little bit in only one dimension, let me urge that the Social Security Administration moves rapidly to initiate mailing annual statements to all participants so that American workers can know more about their most important asset and prepare kn/ wl lgeably for their future.

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7

Personal Security Accounts: A Proposal for Fundamental Social Security Reform

Michael J. Boskin
Laurence J. Kotlikoff
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After Defense Department spending, Social Security is the largest program in the federal budget. For more than half the working-age households in the United States, Social Security taxes exceed personal income taxes. Further, for most elderly households, the future payments they will receive from Social Security constitute their most valuable asset, with the possible exception of their house. Social Security is not only large; it is also effective. It has provided substantial income security to the elderly, kept many elderly out of extreme poverty, and transferred hundreds of billions of dollars from younger, wealthier generations to older, poorer generations. For cohorts of elderly in the 1950s, 1960s, 1970s, and even 1980s, it has offered a relatively high, if declining, rate of return on tax contributions.

The success of Social Security has diverted attention from a number of significant shortcomings in its design. These problems fall into four categories:

1. Financial solvency
2. Equity
3. Efficiency
4. Uncertainty and lack of information

It is well known that the Social Security system is not funded; its financial assets at any point in time amount to only a trivial fraction of the future payment obligations of the system. The true funding source to meet these future obligations is the taxes or contributions of future workers. The system is in perpetual bankruptcy if these future tax receipts are ignored. But Social Security

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is not strictly a pay-as-you-go plan. Such a plan would simply pay to beneficiaries the money that was collected each period from payroll taxes. Social Security does not have the inherent flexibility of such a plan. Instead, it more closely resembles an unfunded defined benefit pension plan, where the benefit formula is not explicitly adjusted to changes in the cash flow of the system. A major problem with an unfunded defined benefit plan is that it is very susceptible to financial crises. If the benefits are slightly more generous than the taxes collected for a period of time, the system quickly runs into a liquidity problem. The financial position of Social Security depends to a much greater extent on short-run business cycles and on long-run productivity changes and demographic developments than would a true pay-as-you-go system. This, along with the difficulty in forecasting both demographic and economic developments, explains the repetitive financial crises of Social Security.[1]

The Social Security system is not equitable in that it offers very different rates of return to households in similar circumstances. Some of the distinctions seem quite arbitrary and yet can cause benefits to differ by tens of thousands of dollars. For example, a divorced woman who did not work while married is not entitled to any benefits based on her former husband's Social Security if the marriage lasted less than ten years. If, however, the couple was married for more than ten years, the divorced woman might be entitled to benefits worth $100,000 or more. To us, this seems inequitable, inappropriate, and probably unintentional social engineering. There are other examples of such inequity. Two-earner married couples often receive a much lower rate of return on contributions than one-earner families, and single people, on average, do worse than both. Large families benefit from certain aspects of the insurance programs without paying more than smaller families. Those covered participants with short working careers or short careers in jobs covered by Social Security earn a higher rate of return than those with longer careers. In general, the system seems highly inequitable and capricious in its treatment of a vast number of households.

The uneven treatment and the complicated procedures involved in accurately determining or even roughly assessing one's future benefits leads to the third problem, economic inefficiency. The link between contributions and payouts is sufficiently weak that most workers may view their benefits as unrelated at the margin to their tax contributions. This means that the nearly 15 percent contribution rate for Social Security (including the hospital part of Medicare) must be added to the marginal tax rate of the personal income tax in order to compute the total marginal tax rate on earnings. Given that the economic waste due to distortionary taxation rises with the square of the marginal tax rate, it is easy to see that the Social Security payroll tax could be doubling the distortionary costs of the tax system. These extra distortions are unnecessary. If taxes and benefits were linked more closely, from the individual's perspective, Social Security contributions would be viewed not as taxes,

but primarily as a form of deferred compensation similar to pension contributions, albeit yielding a potentially lower than market return. Social Security contributions would, to a very large extent, be a use of income rather than a tax and would not have the sizable disincentive effects of the latter.

The complicated benefit formulas just mentioned bring us to our final category of problems with Social Security: uncertainty and lack of information. The typical worker is given no concrete information regarding insurance coverage by Social Security. It takes an extreme effort to determine what a survivor's benefits would be in case of death of a spouse or what would be a reasonable expectation of one's future retirement annuity. Even at the time of retirement, there are numerous stories of different offices of Social Security coming up with different benefit amounts for the same individual. There is a similar lack of information regarding the disability insurance part of the Social Security program. Most workers have no idea about whether they qualify for disability insurance, let alone how much they would receive should they become disabled. The point is that people face a situation of great uncertainty and lack of information and therefore make uninformed and probably inefficient decisions regarding private insurance coverage and savings.

The revisions of the Social Security system, such as those that occurred in 1983, have been prompted by the system's recurring financial crises. The outcomes have been to change the contribution rates or the benefit formulas or to tax part of the benefits, but the fundamental design of the system has been neither changed nor studied. It is our believe that what is needed to address the four problem areas we have identified is structural reform of the system rather than tampering with tax or benefit schedules.

The Personal Security Accounts (PSA) proposal incorporates many reform ideas that have been previously advanced by members of Congress and government commissions. Chief among these is *earning sharing*, which was recommended by the 1979 Social Security Advisory Council and by the five members of the National Commission on Social Security Reform (Greenspan Commission) selected by the Democratic leadership. In addition, there are several features of the PSA plan that reflect principles of and practices in private saving and insurance markets. These include actuarial benefit calculations, a tight and clear link between contributions made to and benefits received from Social Security, the individual ownership and portability of PSAs, and annual PSA reports.

Our goal in proposing a reform in the structure of Social Security is not to alter the goals of the system, but rather to meet those goals more effectively and efficiently. In our PSA proposal, we recognize the need for mandatory public provision of social insurance. Private insurance markets are hampered by severe problems of adverse selection, making their pricing far from actuarially fair, and they fail to offer inflation-protected life annuities. We, there-

fore, retain the five insurance functions of Social Security (old age, disability, spousal survivor, child survivor, and old age hospital insurance). We also recognize the desirability of a progressive social security system. The existing Social Security system is redistributive in that it offers a better rate of return to low-income participants than to high-income ones. This kind of redistribution, which is clearly intentional, could not be accomplished by private insurers. Our proposed reform retains redistribution from high- to low-income households. In fact, it makes it much more explicit and also eliminates the capricious redistribution from low- to high-income households that now occurs.

A discussion of Social Security reform must include the extent to which past policy constrains current options. We have had an unfunded system for nearly fifty years and have accumulated an unfunded liability of several trillion dollars. While the merits of having a funded system can be discussed in theory, switching to a funded system at this point would cause an enormous intergenerational transfer. One generation would be asked to pay for two retirements, their own and that of the retired elderly at the time of the switch. Since this is undesirable from our perspective and likely to be politically infeasible, we accept the continuing nature of the plan. We also believe that the system cannot be changed for the currently retired or for those who are near retirement. Therefore, we propose that at the initiation of the PSA reform, only those under forty-five be enrolled in the new plan; those forty-five and older at the plan's initiation would remain under the current Social Security system.

The basic idea of our reform is to tighten the link between contributions and benefits and to offer households an insurance package more customized to their needs. Despite the continued unfunded nature of the plan and its progressivity, the new system would mimic private insurance in many more respects than does the current system. Each individual would have a PSA. Contributions credited to these accounts would be spent (in an accounting sense) for the five types of insurance policies mentioned above in proportions that would depend on the age structure of the family. The progressivity of the PSA system results from grossing up credited contributions for those with low incomes and grossing down credited contributions for those with high incomes. The rate of return implicit in the annual purchase (in an accounting sense) of additional insurance policies will vary from year to year according to the overall financial circumstances of the system. In this way, the system will have the increased flexibility necessary to avoid periodic financial crises. However, previous rates of return used in calculating benefits received for previous contributions are fixed and guaranteed. The system will be more equitable in that rates of return would not systematically differ for one- and two-earner couples and for single individuals and married couples. The efficiency advantage of our plan stems directly from the tighter link between pay-

ins and insurance coverage; thus, calling the payments contributions rather than taxes becomes more appropriate. Finally, the uncertainty regarding one's coverage and accrued benefits will be eliminated by sending each participant an annual statement detailing taxes paid, credits received, and insurance benefits purchased with the credits.

In the next section, we describe the proposal in detail. We then analyze problems of inequity and inefficiency under the current system, pointing out how these problems would be resolved with PSAs. Finally, we summarize the advantages of the PSA alternative.

The PSA System

The PSA proposal changes Social Security's determination of Old Age, Survivors and Disability Insurance (OASDI) benefits. It also modifies OASDI taxation. The proposal does not deal with the Hospital Insurance (HI) component of Social Security, although reforms similar to those proposed for OASDI seem feasible. The PSA system is designed to adjust the generosity of Social Security automatically to changes in financial projections, but these adjustments are made at the margin—that is, they affect the accumulation of additional Social Security benefits but do not alter benefits that were accumulated in the past. These features, as well as the provisions for the transition to PSAs, are discussed here.

The main issue with respect to the transition is the establishment of initial PSA accounts for those under age forty-five; those forty-five and older at the initiation of PSAs will not become PSA participants but will continue receiving benefits under the current Social Security system.[2] While we attempt to be as specific as possible in laying out the PSA plan, it should be clear that we are describing a generic alternative to the current structure of Social Security, so many of the specifics of this scheme could be modified somewhat without altering the basic advantages of PSAs. Our description of PSAs begins with an illustration of the determination of PSA credits and benefits.

Benefit Determination under PSAs: An Illustration

The provision of benefits under PSAs can be easily understood by considering the example of John and Sally Doe, who are ages forty-one and thirty-five in the year 1999. John and Sally have a daughter, Josey. All dollar figures in the example are in 1986 dollars and are purely hypothetical in the sense that they might be substantially greater or smaller than those that would actually arise under the PSA plan. In the year 1999, John pays $2,000 and Sally pays $1,000 in Social Security taxes. Their combined tax payment of $3,000 is

less than the average tax payment for married couples, so they receive thirty-six hundred PSA credits.[3] This illustrates that:

> The PSA system maintains progressivity under Social Security by providing poorer (richer) families with PSA credits that are larger (smaller) than actual family tax contributions.

The thirty-six hundred PSA credits are divided equally between John and Sally, each of whom receives eighteen hundred credits worth of insurance benefits. Hence:

> The PSA system involves complete earnings sharing in its determination of benefits.

The Social Security system spends John's eighteen hundred credits on the following four insurance policies. These policies are additions to those purchased for John in previous years based on previous accumulations of PSA credits. The four policies are:

1. An additional old age annuity
2. An additional disability annuity
3. An additional old age spousal survivor annuity payable to Sally if John dies
4. An additional child survivor annuity payable to Josey if John dies.

Four corresponding additional insurance policies are purchased for Sally with her eighteen hundred credits. If John and Sally were childless, Social Security would spend none of their credits on child survivor annuities. If John were single with no children, all his PSA credits would be spent on an additional old age annuity and an additional disability annuity. In sum:

> Each of OASDI's four major types of insurance are provided by PSAs. Social Security tailors its purchase of these policies to the specific needs of each family.

The allocation of John's eighteen hundred credits to the four additional insurance policies is determined exclusively by Social Security in light of John's family composition; that is:

> Like the current Social Security system, the PSA system entails forced saving and forced purchase of disability, survivor, and old age health insurance.

John's eighteen hundred PSA credits are spent by Social Security in the following way: twelve hundred credits are spent on an additional old age annuity, two hundred seventy credits are spent on an additional disability annuity, two hundred are spent on an additional spousal survivor annuity, and one hundred thirty are spent on an additional child survivor annuity. This allocation is purely hypothetical. The Social Security Administration (SSA) would establish a simple formula for allocating credits among the insurance policies that would take into account the composition of the family and the age of the participant. Thus, Social Security would allocate relatively more credits to the purchase of disability insurance for younger participants than for older participants, since the need for disability insurance is obviously much greater for a worker age thirty than for one age sixty.

Actuarial Benefit Calculations

The amount of each annuity purchased with the PSA credits is based on an actuarial calculation that equates the present expected value of each annuity's payments to the amount of credits spent on that annuity. The rate of return used by Social Security in 1999 in these actuarial calculations is identical for all policies and all PSA participants. Thus, apart from the explicitly progressive provision of PSA credits,

> All PSA participants receive identical rates of return on their PSA credited contributions.[4]

Old Age Annuity. This annuity is available starting at age sixty-two independent of the recipient's labor earnings. For a participant age a in year t, the additional old age annuity, $A(a,t)$, purchased with PSA age a, year t credits, $C(a,t)$, is determined by the following:

$$C(a,t) = A(a,t) \sum_{i=62}^{100} \frac{P_{i,a}}{(1+r_t)^{i-a}} \qquad (7.1)$$

where $P_{i,a}$ is the probability that the PSA participant will survive to age i given that he or she is currently age a. In equation 7.1, $A(a,t)$ and $C(a,t)$ are both measured in dollars of constant purchasing power; that is:

> PSA annuities are fully indexed for inflation.

The term r_t is the guaranteed real rate of return paid on all PSA credits in year t. We describe below Social Security's annual determination of this rate of return. The total indexed old age annuity received by PSA participants start-

ing at age fifty-two is the sum of the annuities, $A(a,t)$'s, purchased at each age.

Spousal Survivor Annuity. Surviving spouses age sixty-two and over are eligible to receive the sum of all spousal survivor annuities purchased in any year by any deceased spouse. The actuarial formula determining the purchase of additional spousal survivor annuities in exchange for additional PSA credits is presented in Appendix 7A.

Child Survivor Annuity. This annuity is the sum of all child survivor annuities that are still in effect and that were purchased by any deceased parents on behalf of the child. The annuity is paid to surviving children prior to the child's attaining age eighteen. Unlike the spousal survivor annuity, the child survivor annuities are five-year term insurance policies providing an annuity to a surviving child based on the natural parent's death within five years of the time PSA credits are spent on this form of insurance. The five-year term policy ensures an adequate level of child survivor protection in the case a parent dies when the child is quite young. They also assure continued insurance protection (for five years) in case a parent or parents become unemployed and suffer a drop in their accumulation of PSA credits. The actuarial formula determining these five-year term child survivor annuities is presented in the appendix.

Disability Annuity. Like the child survivor annuity, PSA disability annuities are designed as five-year term policies, providing benefits in exchange for PSA credits if the insured participant becomes disabled within five years of the purchase of the policy and is under age sixty-two at the time of the onset of the disability. Each year's expenditure of PSA credits on disability insurance will provide additional five-year term disability annuities to the participant. In the event of disability, the disabled participant will collect the sum of the annuities purchased in the current year and the preceding four years. PSA disability insurance will provide annual payments to disabled workers prior to their reaching age sixty-two. In addition, this insurance policy will have a PSA credit surrender value at age sixty-two that will be spent on an additional old age annuity. This feature will ensure that workers who become disabled when quite young will receive adequate old age income after age sixty-two despite their having accumulated a relatively small old age annuity prior to age sixty-two. Since the age sixty-two cash surrender value is designed to protect the young disabled, its size relative to the disability annuity will be a decreasing function of the participant's age. The actuarial formula determining this annuity is presented in the appendix.

Annual Reports

Tables 7–1 and 7–2 present a hypothetical PSA report for John Doe in 1999 with the dollar amounts expressed in 1986 dollars (the actual 1999 report would have dollar amounts expressed in 1999 dollars). Table 7–1 indicates John Doe's past and current tax payments and accumulation of total PSA credits, as well as the allocation of these credits to the four insurance policies. Table 7–2 shows the annuities that are purchased with John Doe's PSA credits and indicates the extent to which these purchased annuities are payable; recall that child survivor and disability annuities purchased more than five-year term policies.

Consider table 7–1. Since John does not marry Sally until he is age thirty-six and Josey is born when John is thirty-eight, no credits are allocated to spousal survivor insurance and to child survivor insurance until John reaches ages thirty-six and thirty-eight, respectively. In the first year that John begins working (at age twenty-one), Social Security allocates a disproportionately large share of his credits to the purchase of an initial disability annuity. This adjusts for the fact that if John becomes disabled after one year, he will receive only the disability annuity purchased at age twenty-one, while if he becomes disabled at, for example, age thirty, John will receive the sum of the five disability annuities purchased at ages twenty-five, twenty-six, twenty-seven, twenty-eight, and twenty-nine. A similarly disproportionately large share of PSA credits is allocated to the purchase of child survivor benefits in the first year that Josey appears, since the child survivor policies also are five-year term policies.

The annuities indicated in table 7–2 are purely hypothetical; they do not reflect an actual actuarial calculation based on the PSA credits of table 7–1. The point of the table is to illustrate PSA reporting. As mentioned, the age sixty-five disability credit surrender amounts finance additional old age annuities for those who become disabled prior to age sixty-five.

Individual Ownership and Portability of PSAs

Like John, Sally owns her own PSA account. If John and Sally become divorced, they keep their PSA accounts and, assuming they or subsequent spouses pay Social Security taxes, they continue to accumulate PSA credits and PSA insurance annuities. For example, in the case of old age annuities, the additional annuities purchased when young simply add to those purchased when divorced in determining the total old age annuity. While a divorced person spends none of his or her additionally accumulated PSA credits on survivor insurance for his or her former spouse, the former spouse is still eligible to collect an old age survivor annuity based on purchases of such annuities by the former spouse during their years of marriage. If the

Table 7–1
Sample Personal Security Account: PSA Credits and Tax Payments

JOHN DOE
1999 PERSONAL SECURITY ACCOUNT
Social Security #123–45–6789 Current Age 41
Spouse Sally Doe #1 Child Josey Doe

PSA Credits

Age	*Total*	*Old Age*	*Disability*	*Spousal Survivor*	*#1 Child Survivor*
21	$500	$250	$250	0	0
22	550	440	110	.	.
23	600	480	120	.	.
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
35	1,000	800	200	.	.
36	800	500	180	$10	.
37	900	575	200	125	.
38	900	300	180	115	$35
39	1,500	870	300	180	150
40	1,800	1,200	270	200	130

Tax Payments

Age	*Amount Paid by John Doe*	*Amount Paid by John Doe's Spouse*
21	$480	0
22	535	0
.		
.		
.		
40	1,200	[illegible]

Table 7-2
Sample Personal Security Account: PSA Annuities

1999 PERSONAL SECURITY ACCOUNT
JOHN DOE Social Security #123-45-6789

	Disability Annuities					Child Survivor	
Age	Old Age	Purchased Payable	Credit Surrender Value	Spousal Survivor	Purchased	Payable	
21	$230	$3,500					
22	256	1,200					
23	241	1,250					
	.	.					
	.	.					
	.	.					
35	290	1,575					
36	263	1,350	$1,350	$15,000	$300		
37	275	1,400	1,400	20,000	325		
38	187	1,200	1,200	24,000	310	$3,700	$3,700
39	362	2,000	2,000	35,000	450	1,800	1,800
40	450	1,850	1,850	33,500	500	1,500	1,500

Total old age annuity	$10,145
Total payable disability annuity	7,823
Total age 62 disability credit surrender value	127,000
Total spousal survivor annuity	1,885
Total payable child survivor annuity	7,742

divorced couple have children from their marriage, each former spouse is required to buy child survivor benefits for each of their children. Hence

> PSA accounts are individually owned and are completely portable, but the PSA system requires divorced parents to continue to purchase survivor insurance for children of previous marriages.

Taxation and Accrual of PSA Credits

Social Security tax collection would be changed slightly from current practice by taxing combined earnings of spouses at scheduled rates rather than taxing each spouse separately. For married couples under age sixty-two, the proposal establishes a covered earnings ceiling on the couple's combined earnings and collects taxes on earnings up to this ceiling. For single heads of households, a 30 percent lower earnings ceiling is established. These changes are appropriate because single individuals typically have smaller insurance needs than married couples. Relative to the current system, only high-income, single-earner couples will experience tax increases. The proposal leaves unchanged the time path of scheduled Social Security tax rates.

Under the fully phased-in PSA system, Social Security taxation and the accrual of PSA credits and benefits ceases once a participant reaches age sixty-two. In the case of married couples, younger spouses are taxed as single individuals once the older spouse reaches age sixty-two. Assuming these younger spouses are still working, they will continue to accrue PSA credits and purchase benefits that enter into their own PSAs. The earnings of spouses over age sixty-two will be taken into account in the progressive provision of PSA credits in exchange for Social Security taxes.

Social Security Financing and Choice of Annual Guaranteed Rates of Return

The PSA proposal involves no significant change in the time path of aggregate Social Security taxes or aggregate benefits. Under PSAs, Social Security would continue to be self-financing, with benefits paid to older retired generations financed by taxes on young and middle-age workers. Unlike the current system, however, the PSA system has provisions that would avoid short-term funding crises such as those of 1977 and 1983 and that would automatically eliminate long-run deficits.

The choice of the term r_t, the guaranteed rate of return to be used in calculating each year's purchase of additional annuities, which appears in equation 7.1 and the equations in the appendix, will be chosen each year by an independent board of actuaries to ensure long-run balance between benefits and taxes and the preservation through time of a significant trust fund equal

to at least three years of benefit payments. The significant trust fund will insulate the system from short-run fluctuations in tax receipts due to recessions, and the annual rate of return will be automatically adjusted to maintain balance in present value between tax receipts and benefit payments over the succeeding seventy-five years. Hence, as demographic or economic projections change, the annual rate of return will be adjusted downward in the case of projected seventy-five-year deficits and upward in the case of projected seventy-five-year surpluses. Since the government will guarantee the payment of all purchased annuities, the board of actuaries will use conservative projections in determining the annual rate of return. It is important to note that changes in the annual rate of return affect only the purchase of additional benefits and leave unchanged PSA policies purchased in the past. Thus,

> The choice of each year's rate of return will affect only the calculation of the purchase of retirement, survivor, and disability annuities in that year; annuities purchased in previous years based on previous rates of return will never be altered.

The Transition to PSAs

To minimize disruptions for those retired, those soon to retire, and those who are disabled.

> All Americans forty-five years and older and those currently receiving Social Security disability payments are exempt from the PSA system and will continue to pay taxes and receive benefits as mandated under current law.

For Americans under age forty-five at the time of the introduction of PSAs, benefits will be determined based on their PSA credits.

Determination of Initial PSA Credits. At the start-up of the PSA system, all PSA participants will receive an initial allocation of PSA annuities. These annuities will be calculated by treating each initial PSA participant (those under age forty-five) as if he or she had always been enrolled in the PSA system. Thus, Social Security will use information on past tax contributions, past marital status, and past birth of children to determine the PSA credits that would have been earned and the PSA annuities that would have been purchased in each year in the participant's past.

While we realize that this counterfactual historical simulation will require somewhat more information than is currently available to Social Security, particularly marital and birth of children histories, we feel such information could easily be obtained from PSA participants. Random audits of this information plus penalties for fraudulent statements should mini-

mize problems of cheating. In simulating PSA histories, we propose that the board of actuaries use a 3 percent real rate of return for each past year's annual PSA rate of return.[3]

During the transition to complete PSA participation, there will be couples in which one spouse participates in PSA and the other does not—that is, one spouse is younger than forty-five and one spouse is forty-five or older at the time of the initiation of PSAs (this includes participants and nonparticipants who subsequently marry). In these cases, Social Security will calculate PSA credits and annuities for the participant, pretending that his or her spouse is also a participant. For the nonparticipant, Social Security will calculate Social Security benefits based on current law, pretending, where relevant, that the PSA participant is a nonparticipant.

Taxation during the Transition. At the initiation of PSAs, all couples, including nonparticipants, will be taxed based on the PSA method of taxation, which has a higher taxable earnings ceiling for couples. For high-earning PSA nonparticipants who are single, this will mean a small reduction in taxes relative to the current system, and for certain high-earning couples, this might mean a small increase in taxes. But, as described below, such a change would reduce some of the current system's more egregious inequities.

Other Features of PSAs

Initial Age of PSA Participation. The initial age of participation is eighteen. Participants married to nonparticipants under age eighteen will receive PSA credits and annuities in the same manner as described above for the case of older participant-nonparticipant couples.

Universal Coverage. All Americans under age forty-five at the initiation of PSAs will be enrolled in the program. The method of allocating initial PSA annuities described above avoids the problem of giving excessively large returns to many new enrollees. Such a problem would arise if the current Social Security system immediately instituted universal coverage.

Eliminating Earnings Testing and Income Taxation of PSA Benefits. Under the PSA system, benefits would not be subject to an earnings test, nor would benefits be subject to income taxation.

Problems of Inequity and Inefficiency under the Current System and Their Resolution under PSA

Equity Issues

Under the current Social Security system, a variety of benefits beyond the worker's basic retirement annuity are available to qualifying dependents, with no requirement that the worker contribute additional amounts to pay for these benefits. These marginally free benefits include dependent benefits for current and former spouses, survivor benefits for current and former spouses, and survivor benefits for children. Since these marginally free extra benefits are not earnings tested, many of the recipients of these transfers are quite well-to-do middle- and upper-income households. Those who pay for these transfers are single workers with no dependents and low-, middle-, and upper-income two-earner couples that qualify for either no or quite small dependent benefits. These workers are taxed the same as those with qualifying dependents, but their families receive little or none of the system's marginally free benefits.

The amount of lifetime marginally free benefits can be sizable relative to the worker's lifetime tax payments. Table 7–3 presents projections of lifetime Old Age and Survivors Insurance (OASI) benefits and taxes for different middle-income households under current law.[6] The households are married couples in three cohorts in which the husband's share of total household labor earnings ranges from 50 to 100 percent. The calculations take 1985 total household labor earnings of $25,000 as a benchmark. The three cohorts are the cohort born in 1930, the cohort born in 1960, and the cohort that will be born in 2005. In the calculations, total household labor earnings prior to 1985 equal $25,000 deflated by a wage growth factor reflecting growth in average wages between the year in question and 1985. Total household earnings in future years equal $25,000 times a growth rate factor reflecting the growth in real wages projected by the Social Security actuaries in their intermediate 1985 projection and the projected age profile of earnings. Lifetime benefits and taxes, including income taxation of Social Security benefits, are calculated as present expected values as of age twenty-five using male and female mortality probabilities. Lifetime benefits include retirement and spousal survivor benefits but do not include child survivor benefits, disability benefits, or health insurance benefits. Lifetime Social Security taxes exclude disability and health insurance taxes. All dollar figures are expressed in 1985 dollars. A 3 percent real interest rate is used in forming present values.

The table points out two well-known types of redistribution in the current system. First, there is an intergenerational redistribution. Earlier cohorts

Table 7–3
Intergenerational and Intragenerational Inequity: Middle-Income Households with $25,000 of Earnings in 1985

	Husband's Share of Total Earnings		
	100%	*67%*	*50%*
1930 Cohort (age 25 in 1955)			
PV benefits	$50,231	$44,779	$41,591
PV taxes	42,509	48,817	48,570
PV transfer	7,722	−4,038	−6,979
1960 Cohort (age 25 in 1985)			
PV benefits	78,257	65,906	60,770
PV taxes	103,157	101,699	100,978
PV transfer	−24,899	−35,792	−40,208
2005 Cohort (age 25 in 2030)			
PV benefits	149,971	126,414	116,915
PV taxes	198,009	195,102	193,666
PV transfer	−48,036	−68,688	−76,751

[a]All figures are present expected values measured in 1985 dollars discounted to the year each cohort was age twenty-five. A 3 percent real interest rate was assumed in forming these present values. Earnings prior to and after 1985 equal, respectively, $25,000 times a year-specific factor reflecting historic and projected growth in real wages.

are projected to fare much better under Social Security than later cohorts. Thus, for the 1930 one-earner couple, the present expected value of benefits exceeds the present expected value of taxes by $7,722; this difference is −$48,036 for the middle-income, one-earner couple born in 2005. These intergenerational transfers are associated with the unfunded financing of Social Security, as well as projected changes in the age structure of the population. Most observers believe, as do we, that this intergenerational redistribution, while probably not fully intended, cannot and should not be changed radically or rapidly for political and other reasons.

The second type of redistribution, intragenerational redistribution, is another story. As mentioned, redistribution between one- and two-earner couples arises because dependent and survivor benefits are available to nonworking spouses, with no additional tax contributions required from the working spouse. The redistribution between such couples is substantial, and it is projected to continue indefinitely.

Compare for the 1960 cohort the current system's treatment of one-earner couples and two-earner couples in which both spouses are equal earners. The difference, in expected present value, of lifetime benefits less lifetime taxes for these two couples is $15,309 [−24,899 − (−40,208)], which represents more than three fifths of the couple's 1985 earnings. This redistribution occurs for older cohorts and is projected to continue into the indefinite future; for the 2005 cohort, this difference in treatment of one- and two-earner couples represents $28,713.

Measured as a fraction of age twenty-five annual earnings, the redistribution from two-earner to one-earner couples is even larger for lower-income and higher-income households (see table 7–4). For couples born in 1960 with $15,000 in earnings in 1985, the difference in treatment between one-earner and two-(equal)earner couples is almost a year's earnings. For couples with $50,000 in 1985 earnings, the difference in treatment is more than a year's earnings. The progressivity of the benefit schedule provides larger dependent as well as retirement benefits per dollar contributed for lower-income couples; hence, the inequality between one- and two-earner couples measured as a fraction of earnings is greater for lower-income than for middle-income households. In the case of higher-income households, the ceiling on taxable earnings limits the amount of taxes that a single high-earner couple pays, although, over a range, it does not limit the amount of taxes paid by the high-income, two-earner couple. Thus, a single-earner couple with $50,000 of 1985 earnings is projected to pay $138,302 in present value in Social Security taxes, while a two-earner couple in which each spouse earns $25,000 is projected to pay $201,956 in present value in taxes.

An issue not addressed in tables 7–3 and 7–4 is the redistribution between two-earner couples in which both spouses always work and two-earner couples in which one spouse works sporadically. The tables are also deficient in that they take account neither of child survivor benefits nor of disability benefits and taxes.

Table 7–4 also demonstrates the unequal treatment between single individuals and one-earner married couples, as well as between single individuals and married couples in which one spouse accounts for most of the household's total earnings. Take the case of a two-earner couple with $15,000 of earnings, $10,000 of which is earned by the husband. The present value transfer is – $6,565 per spouse. For a single male earning $7,500, the present value transfer is – $11,565, or $5,000 less than the per spouse transfer of – $6,565. Another element of redistribution from single persons to married couples not included in these calculations is the provision of survivor benefits to children.

In addition to transfers from single individuals and two-earner couples to one-earner or close-to-one-earner couples, the Social Security system also systematically transfers from men to women. In table 7–4, the $25,000 male earner who never marries is projected to lose $25,845 from participating in Social Security. The corresponding female who never marries loses only $14,604. This difference is due to the greater longevity of females.

Equity and PSAs

The PSA proposal eliminates the redistribution from single individuals and two-earner couples to one-earner or primarily one-earner couples. It does so while still maintaining progressivity in Social Security. Under a PSA system, benefits are tightly tied to tax payments. Households do not receive addi-

Table 7–4
Intragenerational Inequity: Present Value Transfer for 1960 Cohort (Age 25 in 1985)

	Couple			Single		
	Husband's Share of Total Earnings					
Total 1985 Earnings	100%	67%	50%	1985 Earnings	Male	Female
$10,000	$5,283	$ – 1,203	$ – 2,762	$5,000	$ – 4,331	$ – 2,756
15,000	– 13,129	– 15,812	7,500	– 11,565	– 3,140	
25,000	– 24,899	– 35,792	– 40,208	12,500	– 25,815	– 14,604
50,000	– 61,459	– 115,877	– 120,263	25,000	– 66,090	– 47,385
80,000	– 64,779	– 159,607	– 192,073	40,000	– 99,694	– 86,112

tional benefits unless they receive additional PSA credits, and households making identical tax payments (per spouse in the case of couples) receive identical credits (per spouse). Thus, the progressive formula relating taxes to credits would be based on taxes paid in the case of single individuals and on taxes paid per spouse in the case of couples.

Since it appears politically infeasible to use gender-specific mortality probabilities in calculating PSA insurance policies, the PSA plan, like the current system, would systematically redistribute from men to women. This redistribution would not, however, be connected to the choice of labor supply of married women; that is, wives in one-earner couples and wives in two-earner couples, where each couple has identical total earnings, would receive identical PSA credits.

The earnings-sharing feature of PSAs ensures that nonworking spouses who become divorced receive, during their marriage, PSA credits equal to those received by their working spouses. Hence, divorced persons leave their marriage with Social Security benefits, regardless of the length of marriage.

Abstracting from changes with time in the PSA discount rate, the actuarial discounting feature of PSAs ensures that workers who start contributing earlier in life, non–college graduates, receive as good a return on the PSA credits they earn when young as they do on credits they earn when old. This means that those who start working at an early age are not penalized relative to those who start work at a later age, as is true under the current system.

Another equalizing feature of PSAs is that the system eliminates those work disincentives facing spouses who will collect as dependents under the current system. At present wives and husbands with low earning potential who can collect dependent benefits on their spouse's account receive nothing in return for their own tax payments to Social Security. Hence, they face a greater work disincentive due to Social Security than do their working spouses. By basing the determination of PSA credits on total taxes paid, no matter which spouse paid these taxes, an additional dollar of taxes paid by either spouse provides the same additional benefits to the household.

In addition to discouraging the labor supply of second-earner spouses, the current system might be needlessly discouraging the labor effort of primary earners. The next section addresses the strong possibility that Social Security taxpayers do not understand the connection between their tax payments and future Social Security benefits and view Social Security taxes as providing no additional benefits at the margin.

Social Security and Economic Efficiency: The Issue of Labor Supply Disincentives

The combined employer-employee Social Security payroll tax rate is currently more than 14 percent.[7] Recent estimates suggest that the average marginal

income tax rate is roughly 27 percent (Barro and Sahasakul 1983). If marginal OASDI and HI payroll taxes provided no marginal Social Security benefits or were incorrectly perceived to provide no marginal benefits, the effective marginal federal government taxation of labor supply would average roughly 41 percent. Since the efficiency costs of distortionary taxation increase as roughly the square of the tax rate, the Social Security payroll tax might be more than doubling the deadweight loss of labor income taxation.

Auerbach and Kotlikoff (1985) use a simulation model to study the efficiency costs of running an unlinked rather than a linked Social Security system. In an unlinked system, benefits are unrelated (at the margin) to tax contributions, while in a linked system every dollar of taxes paid increases benefits at the margin by less than a dollar, a dollar, or more than a dollar depending on the design of the benefit schedule.

Calculations based on Auerbach and Kotlikoff's model suggest very sizable potential efficiency gains from having a linked rather than an unlinked Social Security system. Their results are illustrative and should not be viewed as providing concrete estimates for the United States. If, however, American workers systematically underestimate actual marginal linkage, the results suggest that the efficiency of the U.S. fiscal structure could be greatly enhanced, at a minimum, by providing better information to workers about the marginal return on their payroll tax dollars and, at a maximum, by substantially increasing the extent of the marginal linkage. Assuming workers incorrectly believe that they receive nothing at the margin in return for Social Security taxes, the model suggests that the efficiency gains from annual reporting of marginal benefit accrual could be as large as 1 percent of the gross national product (GNP) on an annual basis. That means that the possible efficiency gain is equivalent to a 1 percent larger level of GNP this year and every year in the future. This potential efficiency gain is quite substantial relative to other potential efficiency improvements that have been reported in the literature (see, for example, Ballard, Fullerton, Shoven, and Walley 1985; Auerbach and Kotlikoff 1983).

Actual marginal benefit-tax linkage under the current system can be quite significant for certain workers (Blinder, Gordon, and Wise 1980), but it appears doubtful that many Americans accurately understand the linkage. Indeed, casual conversation among the authors of this proposal and colleagues who are not students of Social Security suggest that most American economists have no understanding of the extent of marginal linkage.

Efficiency and PSAs

An important objective of the PSA plan is making perfectly clear the extent of benefit-tax linkage. The PSA proposal includes annual reports that detail

exactly what additional benefits workers receive in exchange for their additional taxes. For certain workers, such as spouses who would collect as dependents under the current system and, therefore, receive nothing in exchange for their Social Security tax contributions, the PSA proposal significantly lowers the tax on labor effort. Under the PSA plan, additional Social Security tax contributions imply additional PSA credits regardless of which spouse pays the taxes. For other workers, who now mistakenly believe that they receive no marginal benefits in exchange for marginal taxes, the PSA reports would indicate precisely the additional benefits purchased with their additional tax contributions. Finally, for older workers the elimination of the earnings test under the PSA system will eliminate the significant work disincentive confronting the aged under the current system.

Summary

The PSA proposal addresses certain long-standing inequities, inefficiencies, and informational problems within Social Security. While it calls for a major restructuring of Social Security for younger and future generations, the proposal preserves the most important feature of the present system; it strengthens rather than weakens the government's role and responsibility in running Social Security, and it retains Social Security's four major types of benefits: old age annuities, spousal survivor annuities, child survivor annuities, and disability annuities. The proposal also maintains the progressive nature of Social Security and leaves unchanged Social Security's pay-as-you-go financing.

While firm in our basic support of Social Security, we believe that the current Social Security system has serious flaws that cannot be redressed with minor modifications. These design defects appear to generate major inequities, significant work disincentives, and considerable uncertainty about the receipt of benefits. If Social Security were a minor feature in U.S. economic life, modernizing Social Security's design would be of small importance. Such is not the case.

Our scheme for modernizing Social Security involves the following:

1. Providing, on a progressive basis, credits for taxes
2. Sharing credits equally between spouses
3. Appropriately allocating credits to the purchase of the PSA plan's four insurance policies
4. Using actuarial formulas to determine the size of policies purchased with PSA credits
5. Providing annual PSA reports detailing taxes paid and benefits received

By sharing earnings, PSAs eliminate redistribution from single individuals and two-earner couples to one-earner or primarily one-earner couples. By allocating credits to specific needs, the PSA plan improves Social Security's provision of social insurance. By sending annual reports, PSAs reduce potential work disincentives of workers by clarifying exactly the additional benefits they can expect in return for their additional taxes. And by guaranteeing PSA benefits, the government restores security to the country's major source of retirement finances.

Notes

1. See Boskin (1986) for a detailed discussion of Social Security's long-term finances.

2. While we prefer age forty-five as the critical age for initial PSA eligibility, the PSA plan could certainly be implemented with a younger or older initial eligibility age.

3. In determining the relationship between Social Security taxes and PSA credits, Social Security could clearly be either more or less progressive than is currently the case and would also be adapted to any desired change in program size.

4. Rates of return would differ by sex and race if unisex and unirace mortality probabilities were used in the actuarial calculations.

5. A 3 percent real return appears to represent a much higher after-tax real rate of return than the average annual risk-free real return received by investors in the postwar period.

6. These calculations are similar to those of Pellechio and Goodfellow (1983).

7. This includes 2.9 percent for HI.

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COMMUNICATIONS

STATEMENT OF THE AMERICAN ASSOCIATION OF RETIRED PERSONS

The American Association of Retired Persons (AARP) submits the following statement for the record of the Senate Finance Committee's hearing on the Social Security "money's worth" issue. The value of Social Security to specific individuals has been of interest to economists and social insurance scholars for at least the last twelve years. Heretofore, their findings largely have been of interest to the academic community. However, the issue is being discussed more widely now, especially in the media, because of proposed reductions in Social Security benefits and because some are using such analyses to justify significant changes in the program.

Despite the academic trappings, the "money's worth" issue can be translated to a simple question—"Is Social Security a good deal for you or me?" And the answer to this question is almost always yes.

There is no question that evaluating the cost/benefit ratio of Social Security has merit. However, Social Security is more than a pension program; it is social insurance. Thus, Social Security can not be evaluated solely in terms of the rate of return on an individual's contributions, but also should be assessed with regard to the social goals it is designed to achieve.

"Money's worth" is one way of assessing the program's fairness across generations. However, "fairness" does not necessarily mean every generation or every individual in a generation will have exactly the same rate of return. Given the variability in birth cohort size and economic fluctuations as well as the program's evolving nature, fairness will always be a relative measure.

The Association hopes today's presentations on the money's worth issue will not be misinterpreted or misused to undermine public support for this important program. Social Security is immensely popular because people of all ages appreciate Social Security's direct and indirect benefits. It not only provides a foundation for economic security for workers and their families when income is lost because a breadwinner retires, becomes disabled or dies, but it also relieves workers of the financial responsibility of providing for their parents and grandparents. The peace of mind this "buys" is immeasurable.

I. LOOKING AT THE BENEFIT SIDE

To date, all money's worth analyses underestimate the value of Social Security because all such analyses that we have seen exclude the full range of disability and survivor protections provided. While all money's worth studies include retirement benefits, and some factor in survivor benefits, none incorporates disability benefits. Such exclusions are necessarily misleading and diminish the perceived value of the program, especially among young workers who sometimes express the view that they will not "get anything back from Social Security."

Many money's worth analyses exclude the value of survivor protection because the benefit is not separately funded but included in the 5.6 percent of taxable wages credited to the Old Age and Survivors Insurance (OASI) trust fund. In addition, the data on the distribution of survivor benefits are not readily available. Some analysts include the survivor insurance contributions but ignore the benefit side. This last approach makes Social Security look less attractive.

Disability benefits (and disability contributions) are consistently omitted from money's worth studies. The value of this benefit is difficult to gauge because its protection is not provided elsewhere at a comparable cost.

When disability and survivor benefits are used they can be extremely valuable. According to the Social Security Administration, if a young worker has a permanent disability or dies, he and his family could receive the equivalent of an insurance policy worth about $390,000—a policy they would have been unable to purchase in the

private market without incurring enormous cost. Omission of the actuarial value of this benefit diminishes the program's perceived "value."

While there may be a methodological justification for omitting certain benefits, this approach shortchanges the program's true worth to its participants. After all, a disabling accident or illness or even a premature death can strike anyone regardless of educational attainment or level of earnings.

II. ANALYZING THE ISSUE

A money's worth analysis is also affected by the assumptions analysts use. Decisions are made about a range of issues such as the value of the contributions made, the value of the benefits received, interest rates, and longevity. These underlying assumptions influence the outcomes of the money's worth studies, either positively or negatively.

Another caveat regarding assumptions is that most workers' situations change over the course of a lifetime. Few workers have exactly average earnings throughout their lives, and some workers may be single for only part of their lives. None of the studies allows for such variations.

AARP's Public Policy Institute (PPI) recently analyzed the money's worth issue. The study, a summary of which is attached, re-estimates the length of time it takes to recover one's Old Age Insurance contributions by taking into account the deductibility from corporate taxes of the employers' share of payroll taxes. The study found that most workers will recover the value of their Old Age and Survivor Insurance contributions, but at a less favorable recovery rate than current and past retirees. The differing recovery rates are understandable since newer beneficiaries will have participated in a fully mature Social Security system with higher tax rates than when the program began. (Establishing benefit levels for early recipients in excess of what contributions dictate is also found in private pension systems.)

The AARP study also assesses the impact on the recovery rate for contributions if changes were made to the program, such as raising the normal retirement age and making the benefit formula more progressive. (This information is provided in the full study.)

IV. SOCIAL INSURANCE

Social Security is social insurance, not a pension program or an annuity. In a social insurance program, workers pool their resources in a government-sponsored plan to "buy" protection that they might not otherwise have been able to afford as individuals. The program will be shaped by societal decisions about who should receive benefits and their size in relation to worker contributions.

The social goals woven into Social Security's structure inevitably will advantage some people. For example, Social Security was designed to partially offset economic inequalities in society. Consequently, the benefits of lower-earning workers represent a greater portion of their pre-retirement wages than those of higher earners.

Social Security was created to provide a base of economic independence for older people—a goal that was expanded to include those with disabilities. A worker with a disability which begins early in his/her working life will get a better rate of return than others who collect benefits only upon retirement. (However, few would want to "profit" in this way.) Also, workers with pre-existing conditions are covered, and when they can no longer work, they are entitled to disability benefits that they would have been excluded from purchasing in the private market.

Because providing benefits to those who are dependent on the worker is deemed to be important, workers with dependents will get a better rate of return on their contributions than those with none. While spousal protection was part of Social Security since its beginning, benefits for certain other dependents were added in response to a perceived need. As a result, some "special" dependents receive income protection that they might not otherwise have gotten. For example, the dependent of a worker who became disabled before age 22 can collect benefits regardless of his/her age. Also, a divorced spouse who does not remarry and whose marriage lasted at least ten years is entitled to benefits. These protections are seldom factored into a money's worth analysis.

V. CONCLUSION

AARP believes the social insurance goals transcend calculations of which individuals or generations gain or lose under Social Security. Implicit in the social insurance concept is the idea of protecting everyone regardless of individual circumstances. The beneficiary who was locked into low paying jobs, the individual whose children could not afford to take care of him, the person whose retirement savings were wiped out by a poor business decision or the illness of a loved one—

all will be assured a measure of economic independence and personal dignity because they participated in Social Security.

Social Security, as its name suggests, is of social value. We all benefit from living in a society that cares for its aged, its disabled, its widows, and orphans in a decent, dignified, and compassionate manner. The true value of Social Security cannot be measured only in dollars. It must also include the much higher values of dignity, independence, and social compassion that the program embodies.

PUBLIC POLICY INSTITUTE

FACT SHEET

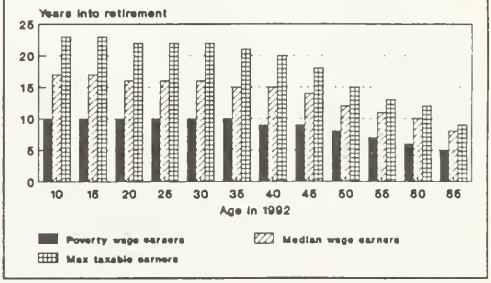
OLD-AGE INSURANCE: WHO GETS WHAT FOR THEIR MONEY?

Social Security (OASDI) provides old-age insurance for retirees and their survivors and disability insurance for workers. It is funded by matching contributions from employers and employees. Employees currently pay 6.2 percent of their earnings for OASDI; 5.6 percent is for Old-Age and Survivors Insurance (OASI) and 0.6 percent is for Disability Insurance. We estimate below who gets their money's worth from Social Security's Old-Age Insurance (OAI).

This analysis does not include Survivors Insurance or Disability Insurance, and therefore underestimates the value of the total Social Security system. Furthermore, as social insurance, OASDI is meant to do more than provide a base of income for the retired worker; it consciously redistributes wealth to adjust for other inequities in society, and also provides financial relief to many who might otherwise have to provide full support to their aging relatives.

Figure 1 depicts three different salary levels and the corresponding number of years necessary to recover employer and employee contributions plus interest after retirement. The figure reveals that Old-Age Insurance is a good deal for all current retirees, but the money's worth of OAI is deteriorating over time.

Figure 1
Years into Retirement to Recover OAI Contributions by Income Level and Age



Females can expect to live approximately 19 years into retirement, and males 15 years into retirement, assuming normal retirement age. All persons earning poverty wages and all persons currently 50 and older can expect to recover within their lifetimes all monies contributed. Females with a median wage or lower salary history can expect to recover all their contributions within their lifetimes, while among females with a wage history of maximum taxable earnings, only those currently over 40 years of age will recover all their contributions. Median earner males 35 and older and maximum taxable earners 50 and older will recover all contributions.

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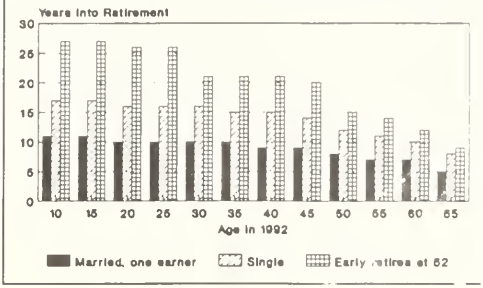
Figure 2 shows the case of a median wage earner under three different scenarios using the same assumptions as in Figure 1. A married couple with one wage earner receives in benefits 150% of what a single earner receives and will thus recover taxes contributed at a much faster rate than the single individual. Married couples with two wage earners may receive the higher of two benefits--either the benefits of two single earners or of a married couple with one earner. The years to recover OAI contributions will vary accordingly.

Figure 2
Years into Retirement to Recover OAI Contributions for Median Earners by Age



An early retiree will have a lower annual benefit retiring at 62 rather than at the normal retirement age and thus can expect to take as many as 10 more years to recover all of the taxes contributed. It is clear from the figure that the early retiree is at the greatest disadvantage in terms of recovering contributions.

Changing the Social Security system can affect the number of years it takes to recover contributions. Examples of three policy changes that have been under consideration are:

- Raising the normal retirement age incrementally from the current 67 years in the year 2027 to 69 years in 2027. This option will most adversely affect early retirees and can expect to add as much as 19 years to the time it takes them to recover their contributions.

- Raising taxes by 3 percentage points over what they are now (8.2 percent, on average for elderly persons) would increase the maximum payback time for a single median-income earner by one year.

- The formula for computing benefits currently replaces 90% of the first $387 of monthly earnings, 32% of the next $1,946 in earnings and 15% of earnings above $2,333. Changing these "bracket rates" to 95%, 32%, and 10% will increase the time it takes maximum taxable wage earners to recover their contributions by one year and lower the number of years it takes poverty wage earners to recover their contributions by one year. Median wage earners would be affected minimally.

For a full report, see "Old-Age Insurance: Who Gets What For Their Money," Issue Brief #15. For more information, contact Lee Cohen or Alisa Male at AARP's Public Policy Institute (202) 434-3870.
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